SONY®

COLOR VIDEO CAMERA

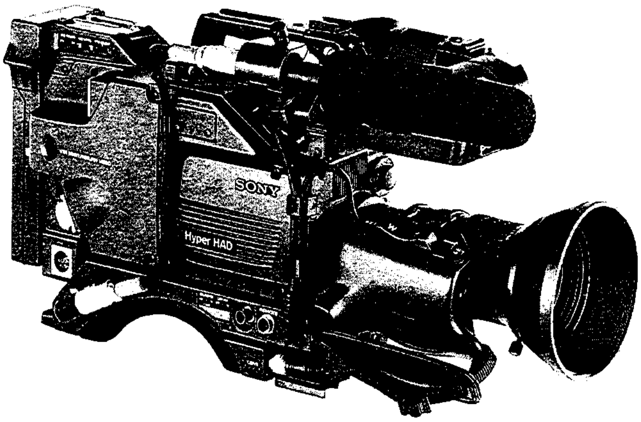
DXC-537AP

ZOOM LENS

VCL-916BYA

SERVICE MANUAL

Vol. 1 (1st Edition)


SONY
Hyper HAD

Hyper HAD

SAFETY RELATED COMPONENT WARNING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

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エレクトロニックビューファインダーDXF-501のサービス情報については、別途発行のDXF-501のサービスマニュアル（9-977-201-01）および、補修部品表（9-977-201-71）をご覧ください。

カメラマイクホルダーCAC-12の補修部品については、別途発行のCAC-12の部品価格表（9-967-251-71）をご覧ください。

On service information for the DXF-501/501CE electronic viewfinder, please see the DXF-501/501CE service manual (9-977-201-01) available separately.

On service information for the CAC-12 microphone holder, please see the CAC-12 service manual (9-967-252-01) available separately.

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VCL-916BYA

1. GENERAL DESCRIPTION

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About This Manual

Purpose and Audience for This Manual

The DXC-537A/537AP Color Video Camera is a camera for business and institutional use, having high picture quality and various functions. Therefore this manual has been prepared assuming that it will be read by all types of users: ranging from professionals and amateurs, to beginning camera operators. Please use this manual according to your experience and needs.

How to use this manual

For those who are used to the operation of a video camera
Begin with Chapter 2 and use it thereafter according to your needs.

For those who are using a video camera for the first time
We recommend that you read Chapter 1 to get a general idea about the video camera first and then read through the remaining chapters.

For those who would like to start shooting immediately
Read Chapter 2 and make the camera system connections and adjustments. If you have a system which has been already connected and adjusted, read Chapter 3 to learn the basic camera operations.

Glossary and Index

The terms with a number such as [1] and [2] are explained in the footnotes on the same page. The terms with an asterisk (*) are explained in the Glossary on page A-6. Further, the Index provides terms in alphabetical order and the pages on which they appear.

Parts of This Manual

This manual is divided into six chapters and appendixes. The following is a brief summary of the contents of each part.

Chapter 1 Introduction
This chapter introduces you to the features of the camera, the names and functions of parts, and how to watch the viewfinder.

Chapter 2 Connections and Adjustments of the Basic System — Camcorder System and Portable VTR System
This chapter shows you how to set up, connect and adjust a portable camera system.

Chapter 3 Shooting — Basic Operations
This chapter explains the basic operations of the camera including the settings of the switches.

Chapter 4 Shooting — Advanced Operations
This chapter explains the settings of the switches according to each shooting situation and menu operations for shooting with special effects.

Chapter 5 System Upgrading
This chapter explains the connection examples of various camera systems other than the portable camera system. It also introduces the recommended components and optional accessories.

Chapter 6 Maintenance
This chapter provides troubleshooting and maintenance information for the camera.

Appendix
This section provides specifications and glossary.

Chapter 1
Introduction

This chapter introduces you to the features of the video camera, the names and explanation of its parts and displays. It provides you with the overall information about the video camera.

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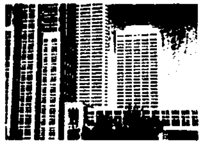
Features

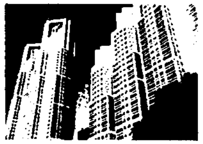
The DXC-537A/537AP series is a high quality color video camera for business and institutional use. The camera uses three 2/3" 1) format Hyper HAD ™ 2) sensor CCD* chips, each having a total of about 380,000 (NTSC) or 460,000 (PAL) effective picture elements.
The camera head is dockable with a camera adaptor or VTR, which provides maximum system versatility.

High Picture Quality

Horizontal resolution* of 750 TV lines, signal-to-noise ratio of 62 dB (NTSC) or 60 dB (PAL)

The high horizontal resolution of 750 TV lines and S/N are made possible by the use of high picture quality CCDs with 380,000 (NTSC) or 460,000 (PAL) effective picture elements.





High F8.0 3) sensitivity

Even dark scenes, such in a candlelight, can be shot with high quality.

Conventional camera

DXC-537A/537AP

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1) **2/3"**
Indication of the CCD size converted to the diagonal size of a picture tube. Generally, the larger the CCD size is, the lower the smear is, the higher the dynamic range is and the better the signal-to-noise ratio is.

2) **Hyper HAD ™**
Abbreviation of Hyper Hole-Accumulated Diode.
"Hyper HAD" is a trademark of Sony Corporation.

3) **F8.0**
Indicates the aperture value when the standard picture level is obtained under the lighting of a certain brightness.

Low smear

A vertical tail (smear) appears when a strong light is being shot. This camera suppresses the smear remarkably to make possible shooting with a spotlight.

Two-dimensional crystal low-pass filter

Cross color in the horizontal and vertical directions is greatly reduced so that a fine mesh or striped pattern can be reproduced with less color blur.

The ideal gamma curve*

The gamma curve that determines the reproducibility of black is made to approach the ideal curve. Therefore, even black portions in details and dark scenes can be reproduced effectively.

Stepping diagonal edge compensation circuit

When the difference in brightness between the top and bottom of a horizontal line is large, such as with a fluorescent lamp and window blinds, step-like notches appear on the horizontal line due to the scanning lines. This circuit compensates for these notches while maintaining the reproduction of detail.

Conventional camera

DXC-537A/537AP

Features

High Sound Quality

Supplied super cardioid electret condenser microphone

It eliminates the noise caused by operating the camera, and records the sound from the front of the camera clearly.

Audio reference signal recording

While recording the color bar, the audio reference signal of 1 kHz, -60 dBm (0 dBm = 0.775 Vrms) can also be recorded on the VTR. The recorded signal can be used as a reference signal for checking the cable transmission loss, a sign to start a program, etc.

Versatile Shooting Functions and Operations

ATW (Auto Tracing White balance) function

The white balance* is automatically adjusted to correspond to the changes in the lighting conditions. It is especially convenient when you have little time to adjust it or when you make a continuous recording in a place when the lighting conditions change, for example, moving from outdoors to indoors.

Auto iris compensation function

A backlighted or spotlighted scene can be shot clearly by changing the reference level of the automatic iris adjustment with the A.IRIS MODE selector.

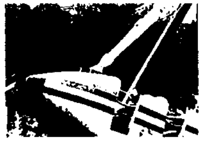
STD position

SPOT L position

Electronic shutter

The built-in electronic shutter lets you shoot fast-moving objects with little blurring.

Electronic shutter OFF


1/500 second

Gain* selection function

Gain values of –3, 0, 3, 6, 9, 12, 18 and 24 dB can be set for each of the three positions on the gain selector.

Turbo gain function

The gain can be set to 30 dB at a touch. It is especially useful when the lighting suddenly becomes dark while shooting.

Color matrix* switching function

Three color tones can be switched by the MATRIX selector to cope with the subject and situation. In the H. SAT position, a gorgeous party, for example, can be shot with vivid color tones. In the FL position, even under fluorescent lighting, the picture can be shot with natural color tones without greenish.

DCC (Dynamic Contrast Control) circuit

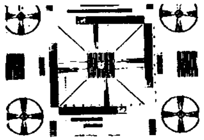
Detects the peak level (the brightest part) of the subject, and automatically adjusts the knee point*. High contrast that usually turns the screen white can also be reproduced.

DCC OFF

DCC ON

EVS (Enhanced Vertical Definition System) function

The vertical resolution can be increased from 400 lines to 450 lines (NTSC) or from 450 lines to 530 lines (PAL). However, please note that signal processing stops down the iris one stop, reducing sensitivity.

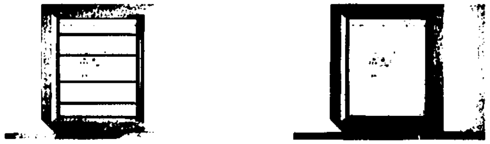

EVS ON

Note

In EVS operation, the dynamic range is narrowed from 600% to 300%.

CLS (Clear Scan™ [1]) function

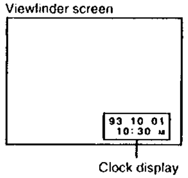
This function adjusts the time difference required to produce a picture on a screen with a video camera and a computer. It reduces the stripe noise which appears when a CRT* screen (such as the screen of a personal computer) is shot.



with noise   noise reduced

Recording the year, date and time of shooting

The year, date and time of shooting can be recorded on the VTR.


Viewfinder screen
93 10 01
10:30 AM
Clock display

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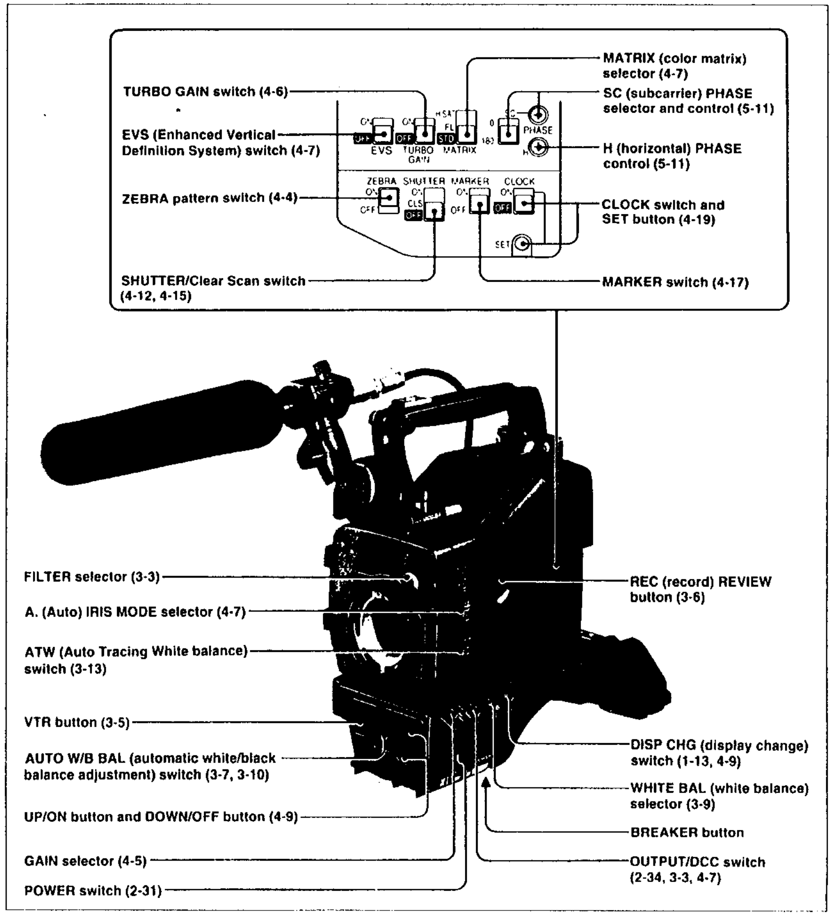
[1] Clear Scan™
"Clear Scan" is a trademark of Sony Corporation.

Names of Parts

For explanation of each part, please see the page indicated in parentheses ( ).

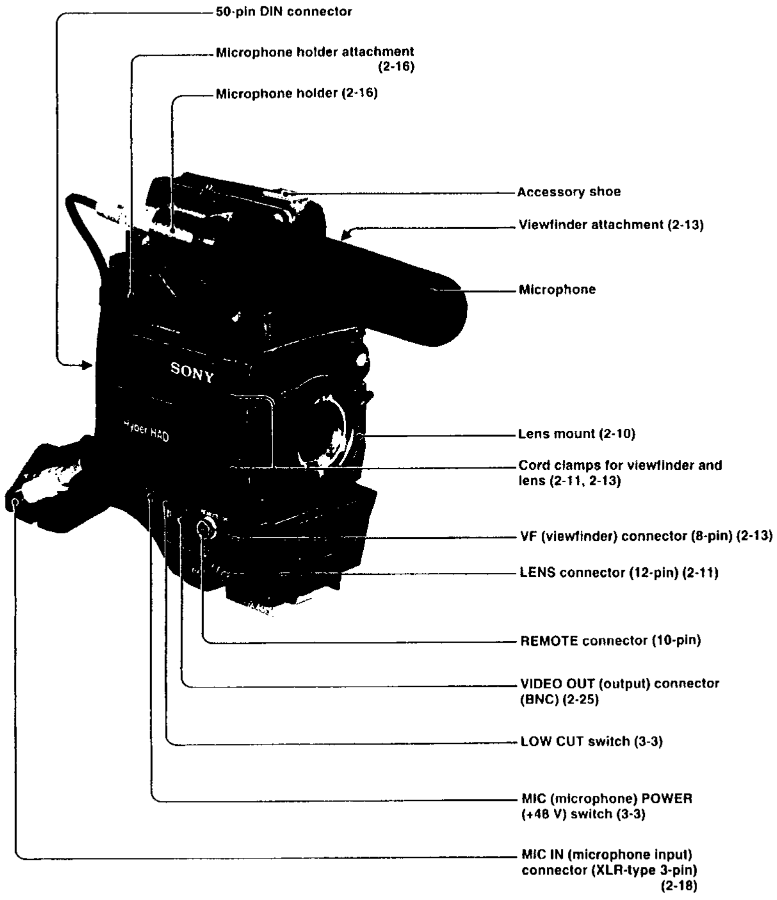
DXC-537A/537AP Camera Head

Controls on the front and side


TURBO GAIN switch (4-6)
EVS (Enhanced Vertical Definition System) switch (4-7)
ZEBRA pattern switch (4-4)
SHUTTER/Clear Scan switch (4-12, 4-15)
MATRIX (color matrix) selector (4-7)
SC (subcarrier) PHASE selector and control (5-11)
H (horizontal) PHASE control (5-11)
CLOCK switch and SET button (4-19)
MARKER switch (4-17)
ON
OFF
EVS
TURBO GAIN
H SAT
FL
STD
MATRIX
0
180
SC
PHASE
H
ZEBRA
SHUTTER
CLS
MARKER
CLOCK
SET
FILTER selector (3-3)
A. (Auto) IRIS MODE selector (4-7)
ATW (Auto Tracing White balance) switch (3-13)
VTR button (3-5)
AUTO W/B BAL (automatic white/black balance adjustment) switch (3-7, 3-10)
UP/ON button and DOWN/OFF button (4-9)
GAIN selector (4-5)
POWER switch (2-31)
REC (record) REVIEW button (3-6)
DISP CHG (display change) switch (1-13, 4-9)
WHITE BAL (white balance) selector (3-9)
BREAKER button
OUTPUT/DCC switch (2-34, 3-3, 4-7)

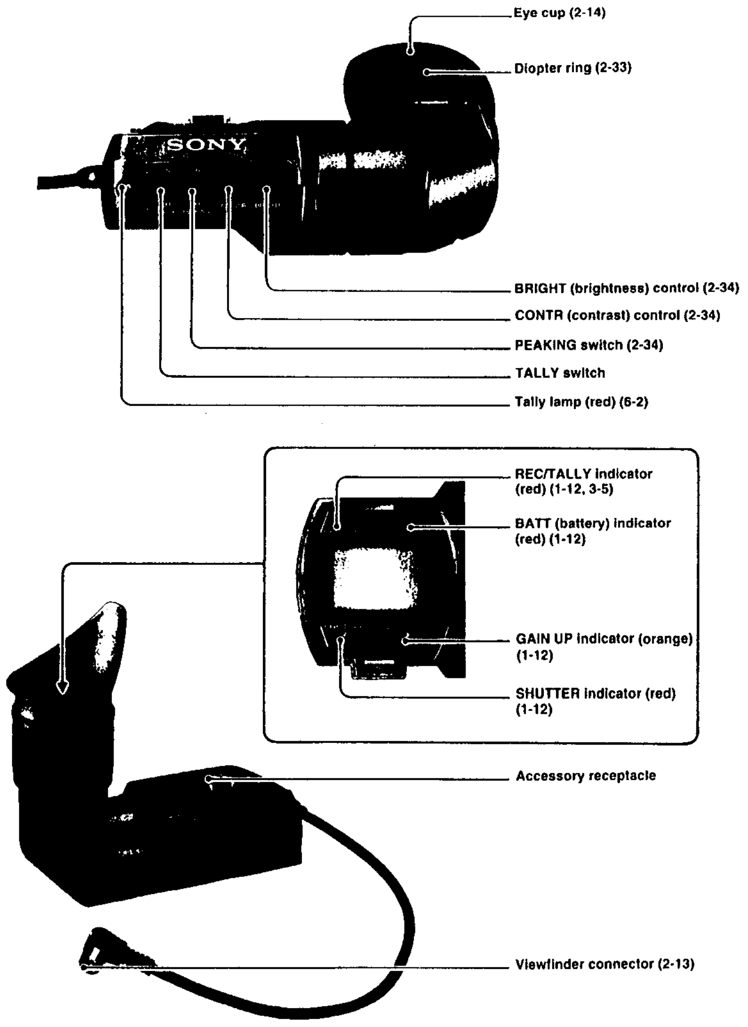
Controls on the front and side of DXC-537A/537AP

Accessory attachments and input/output connectors


50-pin DIN connector
Microphone holder attachment (2-16)
Microphone holder (2-16)
Accessory shoe
Viewfinder attachment (2-13)
Microphone
SONY
Lens mount (2-10)
Cord clamps for viewfinder and lens (2-11, 2-13)
VF (viewfinder) connector (8-pin) (2-13)
LENS connector (12-pin) (2-11)
REMOTE connector (10-pin)
VIDEO OUT (output) connector (BNC) (2-25)
LOW CUT switch (3-3)
MIC (microphone) POWER (+48 V) switch (3-3)
MIC IN (microphone input) connector (XLR-type 3-pin) (2-18)

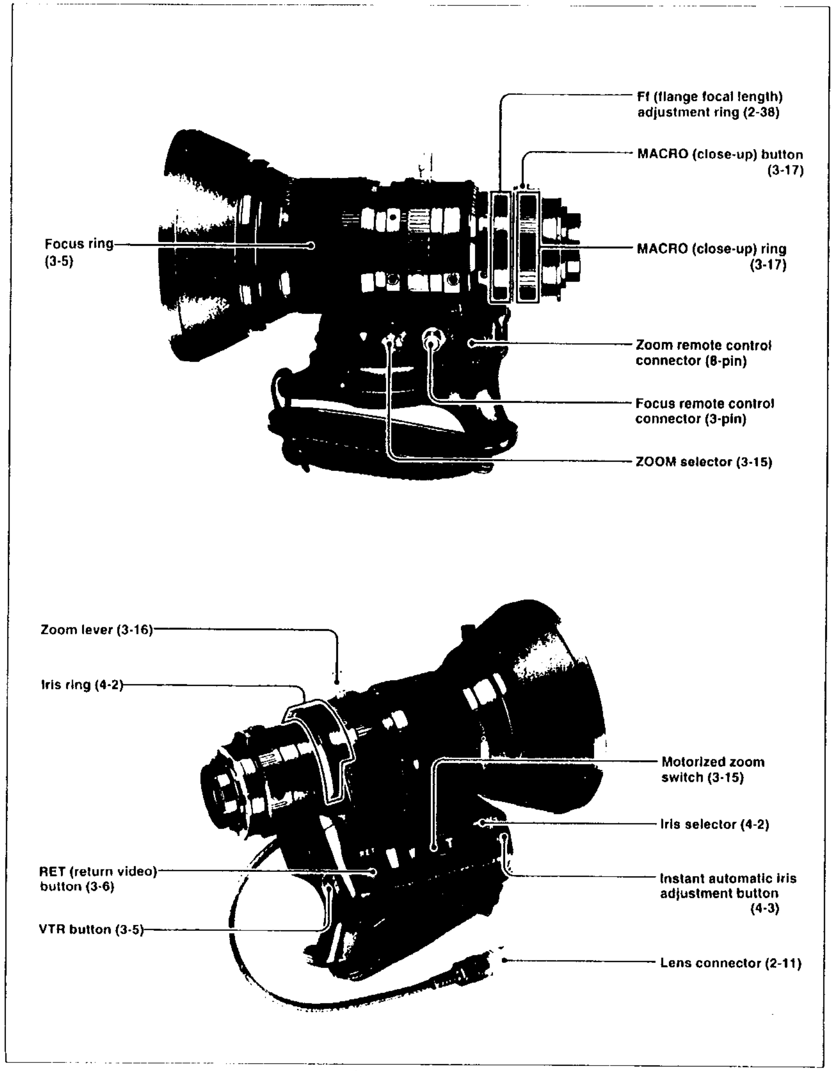
Accessory attachments and input/output connectors of DXC-537A/537AP

DXF-501/501CE Viewfinder


Eye cup (2-14)
Diopter ring (2-33)
SONY
BRIGHT (brightness) control (2-34)
CONTR (contrast) control (2-34)
PEAKING switch (2-34)
TALLY switch
Tally lamp (red) (6-2)
REC/TALLY indicator (red) (1-12, 3-5)
BATT (battery) indicator (red) (1-12)
GAIN UP indicator (orange) (1-12)
SHUTTER indicator (red) (1-12)
Accessory receptacle
Viewfinder connector (2-13)

DXF-501/501CE viewfinder

VCL-916BYA Zoom Lens


Ff (flange focal length) adjustment ring (2-38)
MACRO (close-up) button (3-17)
Focus ring (3-5)
MACRO (close-up) ring (3-17)
Zoom remote control connector (8-pin)
Focus remote control connector (3-pin)
ZOOM selector (3-15)
Zoom lever (3-16)
Iris ring (4-2)
Motorized zoom switch (3-15)
Iris selector (4-2)
RET (return video) button (3-6)
Instant automatic iris adjustment button (4-3)
VTR button (3-5)
Lens connector (2-11)

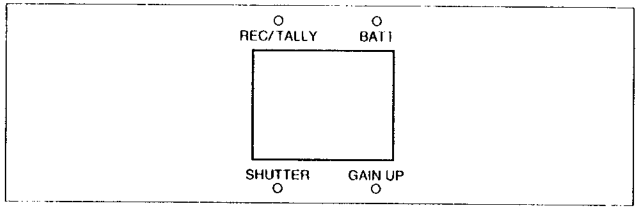
VCL-916BYA zoom lens

Indicators in the Viewfinder and Viewfinder Display

This section explains the status indicators around the viewfinder screen and the messages displayed on the viewfinder screen.

Status Indicators in the Viewfinder

There are four status indicators around the viewfinder screen. These indicators flash or light to indicate the status of the camera, VTR or camera control unit.


REC/TALLY
BATT
SHUTTER
GAIN UP

Status indicators in the viewfinder

Status indicators and their meanings

Indicator (color)	Name	Flashes:	Lights:
REC/TALLY (red)	Recording indicator Tally indicator	• Just after a recording is activated (while the VTR is starting up). • Only for a VTR with the warning function: when the VTR's movement is insufficient	• During recording • When a camera control unit is connected: When the picture of this camera is selected by the camera control unit
BATT (red)	Battery indicator	When the battery of the VTR becomes weak (When using the camera adaptor's battery, it does not flash.)	When the battery of the VTR or the camera adaptor is exhausted
SHUTTER (red)	Shutter indicator	—	When the SHUTTER switch is set to ON or CLS
GAIN UP (orange)	Gain up indicator	—	When the gain is 3 dB or more

When the camera control unit is connected

The BATT indicator flashes fast when a switch or control of the camera control unit is operated. This is not a failure of the unit.

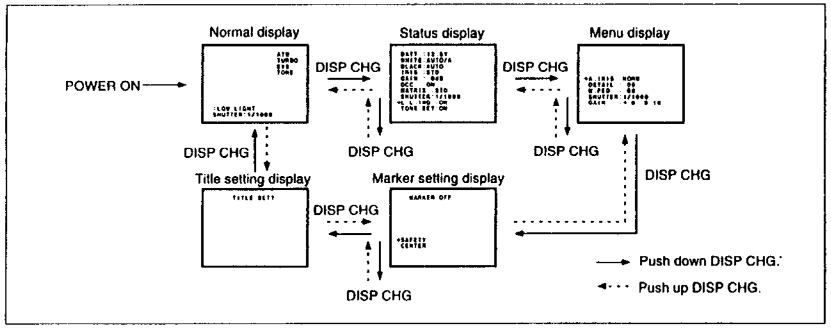
Viewfinder Display

The following displays appear on the viewfinder screen.

- Normal display (including warning messages)
- Automatic black balance and automatic white balance status display
- Status display (current setting status)
- Menu display
- Marker setting display
- Title setting display

Changing the viewfinder display

Each time you push the DISP CHG switch down or up, the display changes in the following order.

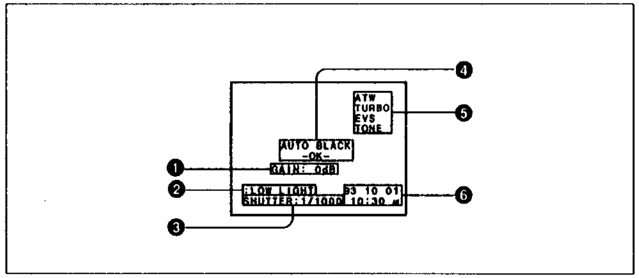

Normal display
Status display
Menu display
POWER ON
ATW
TURBO
EVS
TONE
:LOW LIGHT
SHUTTER:1/1000
DISP CHG
DISP CHG
DISP CHG
DISP CHG
DISP CHG
DISP CHG
DISP CHG
DISP CHG
Title setting display
Marker setting display
MARKER OFF
SAFETY
CENTER
Push down DISP CHG.
Push up DISP CHG.

Changing the viewfinder display

- On the status display menu display or marker setting display, the cursor appears to the left of the item. Each time the DISP CHG switch is pressed down, the cursor moves down, and when it reaches the bottom-most item, the screen changes to the next display.

Normal display (including warning messages)

The viewfinder screen normally displays the following information. If a problem occurs, a warning message appears.


ATW
TURBO
EVS
TONE
AUTO BLACK
-OK-
GAIN: 0dB
:LOW LIGHT
SHUTTER:1/1000
93 10 01
10:30
①
②
③
④
⑤
⑥

Normal display

① Switch indicators

The following indicators appear for two seconds when each switch setting is changed.

Switch indicators

Switch	Indicators
GAIN selector	GAIN: –3 dB, GAIN: 0 dB, GAIN: 3 dB, GAIN: 6 dB, GAIN: 9 dB, GAIN: 12 dB, GAIN: 18 dB, GAIN: 24 dB, GAIN: TURBO
DCC switch	DCC: ON, DCC: OFF
WHITE BAL selector	WHITE: PRESET, WHITE: AUTO/A, WHITE: AUTO/B
A. IRIS MODE selector	IRIS: STD, IRIS: BACK L, IRIS: SPOT L
MATRIX selector	MATRIX: STD, MATRIX: FL LIGHT, MATRIX: H.SAT.

② Warning message

Warning messages are displayed to indicate a problem.

Warning messages and their meanings

Warning message	Meaning
: LOW LIGHT	Lighting is insufficient.
BATT. 10.7V	The input voltage to the camera is low (less than 11V).

You can set the LOW LIGHT message to be displayed or not on the normal or status display.
On the normal display, press the DOWN/OFF button to turn off the message; press the UP/ON button to resume it. *(For setting on the status display, see page 1-16.)*

③ Shutter speed/CLS (Clear Scan) indicator

The current shutter speed or the Clear Scan frequency is displayed steadily.

④ Automatic black balance and automatic white balance status display

The following display appears when the automatic black balance or the automatic white balance function is activated.

Automatic black balance and automatic white balance status display

When:	Display
During black balance adjustment	AUTO BLACK -OP-
When the black balance adjustment is complete	AUTO BLACK -OK-
During white balance adjustment	AUTO WHITE -OP-
When the white balance adjustment is complete	AUTO WHITE -OK-

For details, see "Adjusting the Black Balance" (page 3-7), or "Adjusting the White Balance: (page 3-9).

⑤ Switch/function ON indicators

The following indicators appear when the corresponding switch or function is set to ON.

Switch/function ON indicator

Switch/Function	Indicator
ATW switch	ATW
TURBO GAIN switch	TURBO
EVS switch	EVS
TONE function	TONE

The TONE indicator appears when the OUTPUT switch is set to BARS with the TONE SET item on the status display set to ON. *(See page 1-16.)*

⑥ Clock display

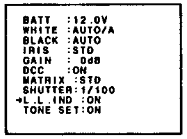
The current year, date and time are displayed when the CLOCK switch is set to ON. The display is superimposed to camera video output.

For clock setting, see "Setting the Clock" on page 4-19.

Indicators in the Viewfinder and Viewfinder Display

Status Display

The display shows the current settings of the switches. It also allows setting the "L.L.IND" and "TONE SET" items.



```
 BATT    :12.0V
 WHITE   :AUTO/A
 BLACK   :AUTO
 IRIS    :STD
 GAIN    :  0dB
 DCC     :ON
 MATRIX  :STD
 SHUTTER:1/100
→L.L.IND :ON
 TONE SET:ON
```

Status display

Items on the status display and their meanings

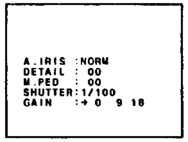
Item	Meaning
BATT	Battery voltage
WHITE	WHITE BAL switch setting
BLACK	Black balance adjustment mode selected on the camera control unit or the remote control unit. (Always indicates AUTO when the camera is used without these units.)
IRIS	A. IRIS MODE selector setting
GAIN	Gain obtained by the current position of the GAIN selector, or TURBO (when the TURBO GAIN switch is set to ON)
DCC	DCC switch ON/OFF setting
MATRIX	MATRIX selector setting
SHUTTER/ CLS	Shutter speed or Clear Scan frequency setting
L.L.IND	Select if the LOW LIGHT message is displayed on the normal display or not.
TONE SET	Select if the 1 kHz audio reference signal is output together with the color bar signal or not

Setting L.L.IND and TONE SET

1. Set the L.L.IND and TONE SET items on the status display as follows:
   Push the DISP CHG switch down or up to display the cursor to the left of the item to be set.
2. Press the UP/ON button to set to ON, or the DOWN/OFF button to set to OFF.

Menu Display

The following items can be set on the menu display.



```
A.IRIS  :NORM
DETAIL  :  00
M.PED   :  00
SHUTTER:1/100
GAIN    :→ 0   9  18
```

Menu display

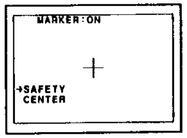
Items on the menu display and their meanings

Item	Meaning
A. IRIS	Set the reference level of the automatic iris function.
DETAIL	Set the detail level.
M. PED	Set the master pedestal* level.
SHUTTER/CLS	Set the shutter speed or Clear Scan frequency.
GAIN	Set the gain obtained by each position of the GAIN selector.

For setting the items, see "Shooting with Special Effects (Menu Operation)" on page 4-9.

Marker setting display

The size of the safety zone and the center marker can be set on this display.
To display the safety zone and the center marker, set the MARKER switch to ON.



Marker setting display

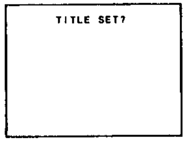
Marker setting items and their meanings

Item	Meaning
SAFETY	Set the size of the safety zone
CENTER	To display the center marker or not

For setting the markers, see "Displaying the Marker on the Viewfinder" on page 4-17.

Title setting display

A title with letters and numbers can be created on this display and be recorded on the VTR.
Show the display on the viewfinder screen and create a title using the UP/ON and DOWN/OFF buttons.



Title setting display

For creating a title, see "Recording a Title" on page 4-21.

Precautions

On Safety

Power supply
Operate the unit on 12 V DC power only. For operation, use the power source specified in this manual.

Do not disassemble the unit
Touching the high-precision parts in the unit may cause permanent damage. High voltage components inside the viewfinder are dangerous.

Keep foreign objects out of the unit
Dropping flammable or metal objects into the cabinet, or spilling liquids on the unit can lead to accidents.

On Use and Storage

Avoid mechanical shock
There are high-precision parts inside the unit. Dropping the unit or subjecting it to mechanical shock may cause damage.

Mount the zoom lens correctly
Incorrect attachment may damage the lens. Before attaching, be sure to read "Attaching a lens" on page 2-10.

Dockable VTRs
The following are the VTRs which can be docked on this unit. Sony does not guarantee the use of the unit docked with the other VTRs.

VTRs dockable on this unit

Manufacturer and model number	Camera adaptor required
Sony Betacam SP VTR **PVV-1/1P**	—
Sony Betacam SP VTR **BVV-5/5PS**	CA-511
Sony Hi8 VTR **EVV-9000/9000P**	—
Panasonic S-VHS VTR **AG-7450**	CA-512/512P
JVC S-VHS VTR **BR-S410/S411/S420C**	CA-513

Do not cover the unit while in use
Covering the unit causes internal heat build-up.

Do not shoot the sun or a strong spotlight for a long period of time
This may damage the CCD elements. If the viewfinder is directly pointed at the sun, the sunlight may focus inside the viewfinder through the eyepiece, and damage the inside plastic.

Avoid the following conditions of use or storage

- In excessive heat or cold (permissible temperature range: −10°C to +45°C or 14°F to 113°F)
  Remember that the temperature inside a locked automobile in summer can rise as high as 50°C (122°F).
- In damp or dusty locations
- Locations where the unit may be exposed to rain
- Locations where the unit is subject to vibrations
- Near locations where strong radio frequency energy is generated

On use and storage of the lens

- When the unit will not be used for a long period of time, put the lens cap on the lens.
- Normally keep the lens attached to the unit. When removing the lens, choose a location where there is the least dust.
- When the lens becomes dusty or soiled, clean it immediately. For cleaning, see page 6-5.

On transportation of the unit

Use the supplied carrying case or packing carton.
When you transport the unit as a package, put the unit in the carrying case and repack it with the packing carton of the carrying case.

In case of trouble

If you notice an unusual sound, smell or smoke, turn off the power immediately, disconnect the power supply and consult your Sony dealer.

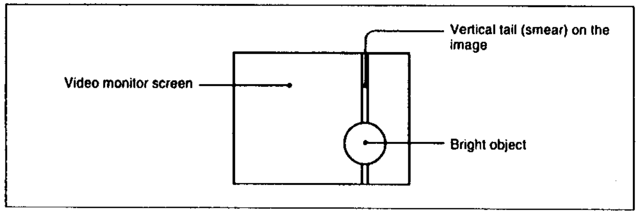
Precautions

Notes on CCD Image Sensors

Because of the high sensitivity of the CCD image sensors, the following phenomena may appear on the monitor screen while you are using the unit. These phenomena do not indicate a malfunction of the unit.

Vertical smear

Smear tends to happen when an extremely bright object such as an electric light, fluorescent lamp, sunlight or strong reflection is being shot.



Vertical smear

White dots

White dots may appear in the video output if the unit is used at very high temperatures.

Aliasing

Aliasing may occur when you shoot fine stripes or straight lines. The lines will appear jagged.

When using the electronic shutter

If the electronic shutter is used when the gain is 18 dB or more, a clear picture may not be obtained. Use the electronic shutter only under sufficient lighting conditions with the gain set to 0 dB or an approximate value.

Chapter 2
Connections and Adjustments of the Basic Systems — Camcorder System and Portable VTR System

This unit can be used in various systems, however, this chapter explains the connections and adjustments of the Camcorder system, a unified system of camera and VTR, and the portable VTR system using a camera adaptor.
For other systems, please see chapter 5.

About the Basic System **2-2**
  Video Camera Kits and Their Components 2-2
  Handling the Carrying Case 2-6
Attaching the Basic System Components **2-8**
  Attaching a Dockable VTR 2-8
  Attaching a Camera Adaptor 2-9
  Attaching a Lens 2-10
  Attaching a Viewfinder 2-13
  Attaching a Microphone 2-16
  Attaching the Chest Pad 2-20
  Attaching a Tripod 2-22
  Using the Soft Case and Rain Cover 2-24
  Connecting a Portable VTR 2-25
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  Adjusting the Contrast and Brightness of the Viewfinder 2-34
  Adjusting the Color of the Video Monitor 2-35
  Adjusting the Flange Focal Length — When the Lens is Changed 2-37

About the Basic System

Video Camera Kits and Their Components

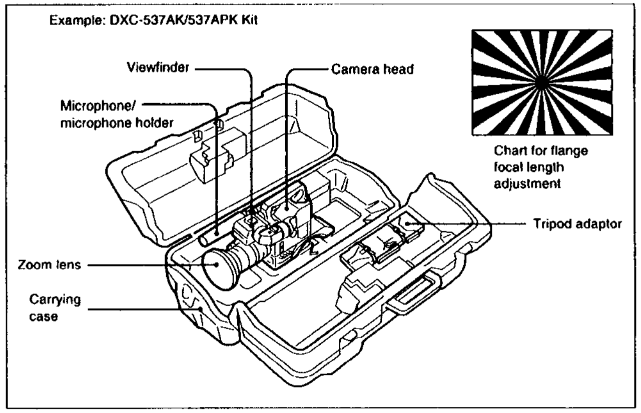
Components of the DXC-537A/537AP series video camera kits

The DXC-537A/537AP camera head is sold as a kit with other components for a camera system. The model name differs according to the components included in the kit and the color system NTSC or PAL. The suffixes K, L and H mean kit names and the suffix P means the PAL system (therefore, the model names without suffix P are of the NTSC system).
Please see the following table and illustration to check your kit.

Components included in the DXC-537A/537AP kits

Model Name / Components	DXC-537AK DXC-537APK	DXC-537AL DXC-537APL	DXC-537AH DXC-537APH
DXC-537A/537AP Camera Head	○	○	○
Chart for flange focal length adjustment	○	○	○
DXF-501/501CE Viewfinder	○	○	×
LC-421 Carrying Case	○	○	×
VCT-14 Tripod Adaptor	○	○	×
ECM-670 Microphone	○	○	×
CAC-12 Microphone Holder	○	○	×
EC-0.3C2 Microphone Cable	○	○	×
VCL-916BYA Zoom Lens	○	×	×

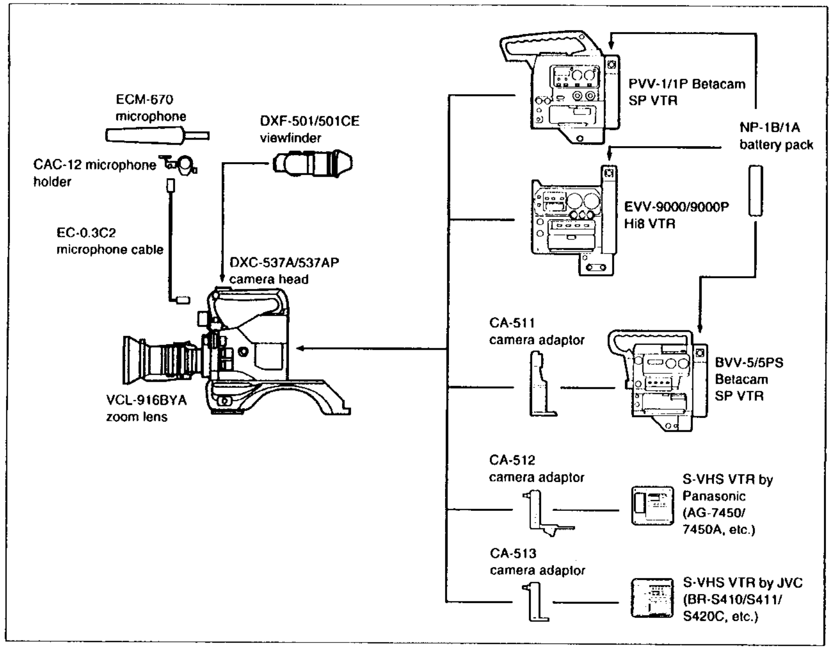
○: included in the kit ×: not included in the kit


Example: DXC-537AK/537APK Kit
Viewfinder
Camera head
Microphone/ microphone holder
Chart for flange focal length adjustment
Tripod adaptor
Zoom lens
Carrying case

Carrying case is open.

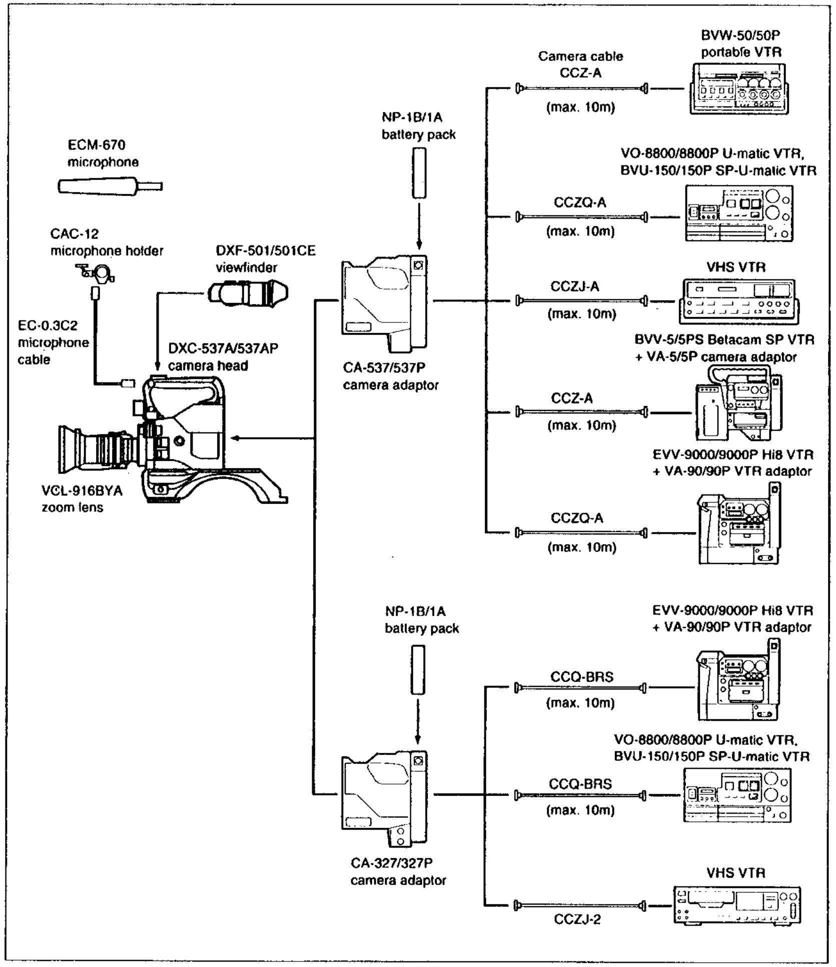
Components required for shooting with a camera

In addition to the components of the kit, other units such as a VTR and power source are necessary for shooting with the camera.
The following charts show the configuration of a camcorder system and that of a portable VTR system.
The equipment in shade are components included in the kit.
For connection to stationary VTRs, see chapter 5.


ECM-670 microphone
DXF-501/501CE viewfinder
CAC-12 microphone holder
EC-0.3C2 microphone cable
DXC-537A/537AP camera head
VCL-916BYA zoom lens
PVV-1/1P Betacam SP VTR
NP-1B/1A battery pack
EVV-9000/9000P Hi8 VTR
CA-511 camera adaptor
BVV-5/5PS Betacam SP VTR
CA-512 camera adaptor
S-VHS VTR by Panasonic (AG-7450/7450A, etc.)
CA-513 camera adaptor
S-VHS VTR by JVC (BR-S410/S411/S420C, etc.)

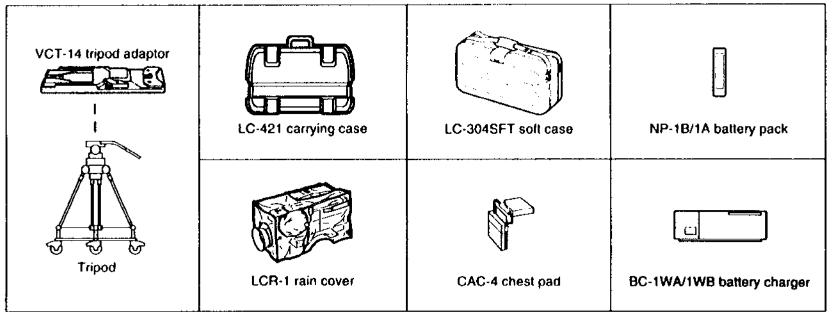
Configuration of camcorder system

About the Basic System


ECM-670 microphone
CAC-12 microphone holder
DXF-501/501CE viewfinder
EC-0.3C2 microphone cable
DXC-537A/537AP camera head
VCL-916BYA zoom lens
NP-1B/1A battery pack
CA-537/537P camera adaptor
Camera cable CCZ-A
(max. 10m)
BVW-50/50P portable VTR
CCZQ-A
(max. 10m)
VO-8800/8800P U-matic VTR, BVU-150/150P SP-U-matic VTR
CCZJ-A
(max. 10m)
VHS VTR
CCZ-A
(max. 10m)
BVV-5/5PS Betacam SP VTR + VA-5/5P camera adaptor
CCZQ-A
(max. 10m)
EVV-9000/9000P Hi8 VTR + VA-90/90P VTR adaptor
NP-1B/1A battery pack
CA-327/327P camera adaptor
CCQ-BRS
(max. 10m)
EVV-9000/9000P Hi8 VTR + VA-90/90P VTR adaptor
CCQ-BRS
(max. 10m)
VO-8800/8800P U-matic VTR, BVU-150/150P SP-U-matic VTR
CCZJ-2
VHS VTR

Configuration of portable VTR system

Convenient accessories for shooting

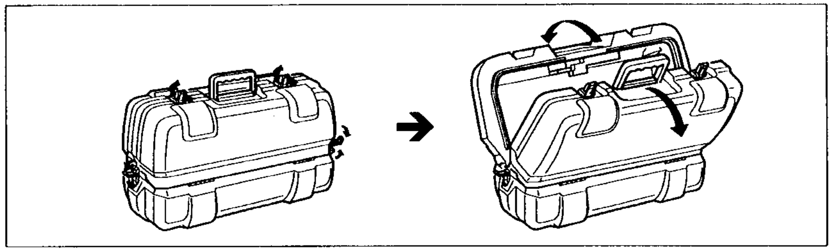

VCT-14 tripod adaptor
Tripod
LC-421 carrying case
LC-304SFT soft case
NP-1B/1A battery pack
LCR-1 rain cover
CAC-4 chest pad
BC-1WA/1WB battery charger

Accessories for shooting

Handling the Carrying Case

Opening the carrying case

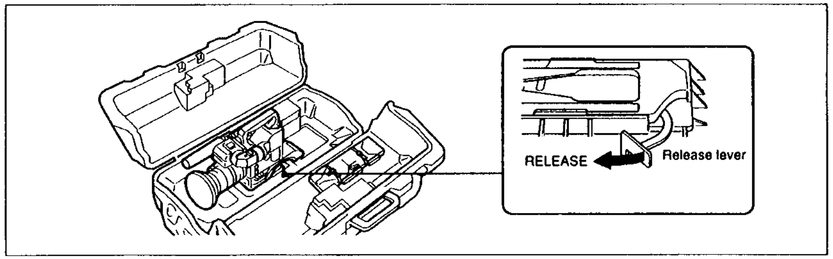
To open the camera carrying case, release the four catches at the edges of the case, then open the upper part of the case.



Opening the carrying case

Taking the Camera Out of the Case

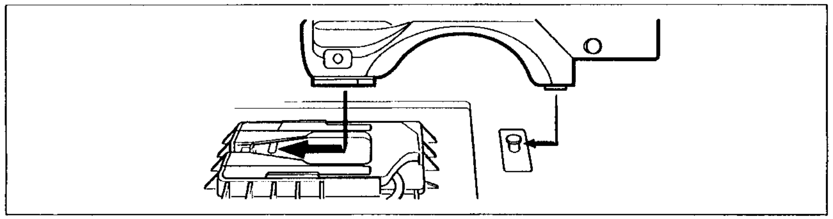
Push the lever on the bottom of the case toward RELEASE to unlock the camera. Slide the camera backward and remove it.


RELEASE
Release lever

Taking out the camera

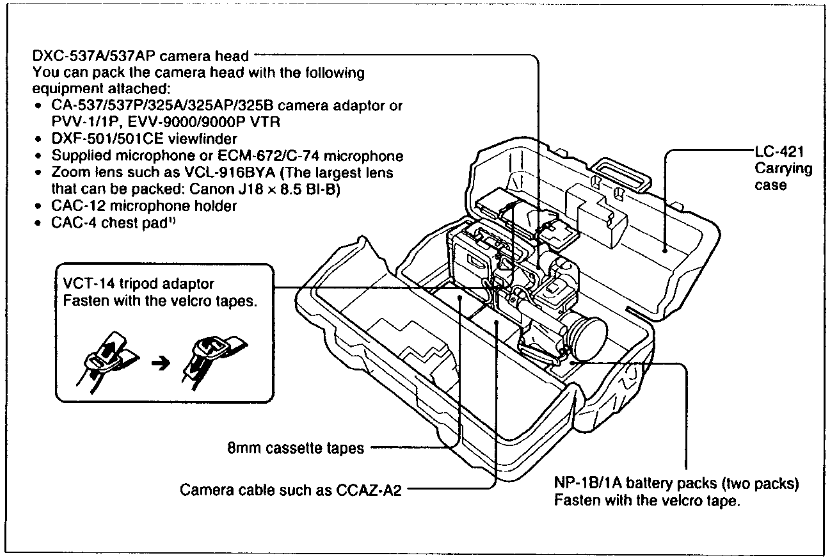
Packing the Camera in the Case

Align the bottom of the camera with the attachment grooves on the bottom of the case, and the pin on the bracket of the camera with the pin on the case. Slide the camera forward until it locks.



Packing the camera in the case

Packing sample


DXC-537A/537AP camera head
You can pack the camera head with the following equipment attached:
• CA-537/537P/325A/325AP/325B camera adaptor or PVV-1/1P, EVV-9000/9000P VTR
• DXF-501/501CE viewfinder
• Supplied microphone or ECM-672/C-74 microphone
• Zoom lens such as VCL-916BYA (The largest lens that can be packed: Canon J18 × 8.5 BI-B)
• CAC-12 microphone holder
• CAC-4 chest pad[1]
LC-421 Carrying case
VCT-14 tripod adaptor Fasten with the velcro tapes.
8mm cassette tapes
Camera cable such as CCAZ-A2
NP-1B/1A battery packs (two packs) Fasten with the velcro tape.

Packing sample

Notes on packing

- Viewfinder: Loosen the lock ring, slide the viewfinder to the left-most position, and tighten the ring. *(See page 2-15.)*
- Microphone: Loosen the microphone fastening lever, lower the microphone and tighten the lever. *(See page 2-19.)*

---

[1] The CAC-4 cannot be packed when the PVV-1/1P is attached to the Camera.

Attaching the Basic System Components

Attaching a Dockable VTR

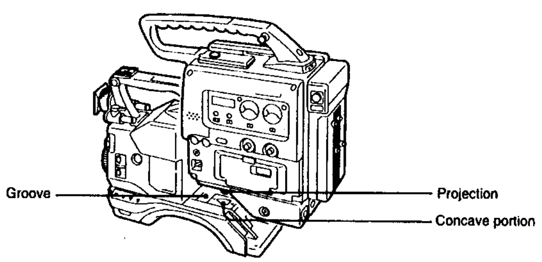
The camcorder system is a unified system of the camera and dockable VTR, such as the PVV-1/1P Betacam VTR and EVV-9000/9000P Hi8 VTR (optional). This section explains attaching a dockable VTR, using the PVV-1/1P as an example. The same procedures apply for attaching and detaching the EVV-9000/9000P.

Attaching a dockable VTR

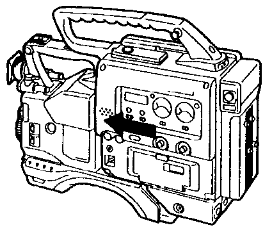
Note

Before attaching a VTR, remove the viewfinder from the camera head.

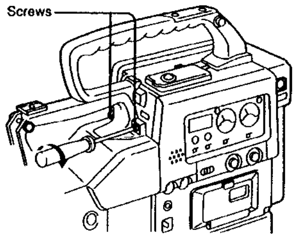
1 Place the projection on the bottom of the VTR on the concave portion of the camera.


Groove
Projection
Concave portion

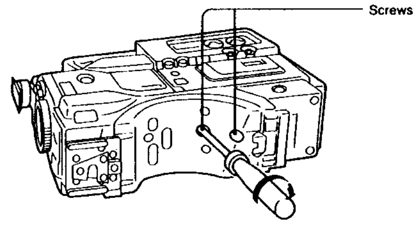
2 Slide the VTR forward until it locks.



3 Tighten the two screws on the handle.



4 Tighten the two screws in the shoulder pad.



Detaching a dockable VTR

Follow the above procedures in the reverse sequence.

Attaching a Camera Adaptor

When using a portable VTR or camera control unit, attach the CA-537/537P or CA-327/327P camera adaptor to the camera head.
The attaching and detaching procedures are the same as those for the dockable VTR.

Note on using the CA-327/327P camera adaptor
Only the CA-327/327P with the following serial numbers can be attached to the DXC-537A/537AP camera head.
CA-327: Serial number 10271 or higher for the DXC-537A
CA-327P: Serial number 40101 or higher for the DXC-537AP

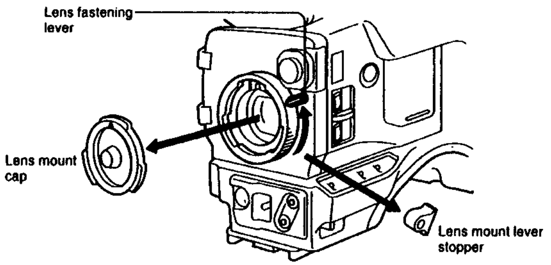
If your serial number is lower than the above number, consult your Sony dealer since the printed circuit board needs to be exchanged.

Attaching a Lens

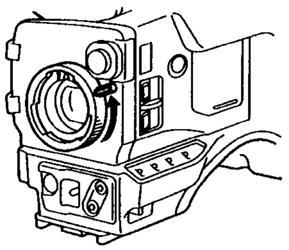
The lens in the DXC-537AK/537APK kit is already attached. For other kits, select a lens appropriate for the camera and attach it. Make sure to mount a 2/3-inch lens. This section explains how to attach a lens using the VCL-916BYA zoom lens as an example.

Attaching the lens

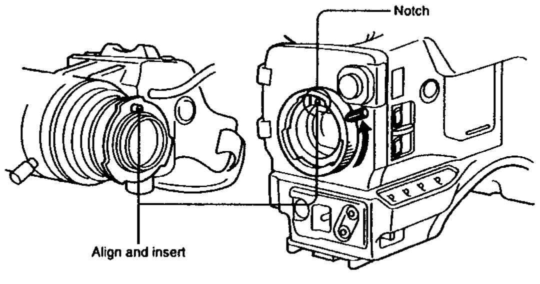
1 Remove the lens mount lever stopper from the lens fastening lever, push the lever up, and remove the mount lens cap.



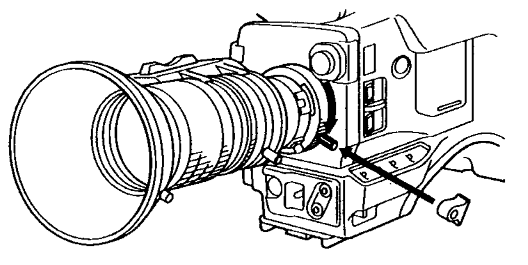
2 Turn the lens fastening lever fully counterclockwise.



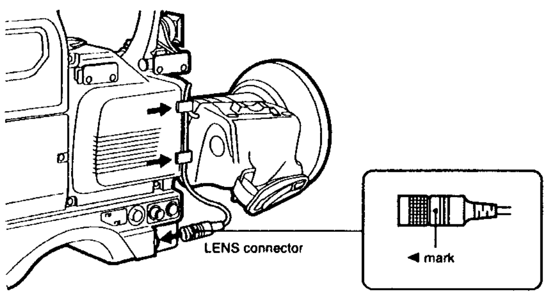
3 Align the center pin on the lens with the notch on the lens mount, and insert the lens into the mount.



4 Holding the lens, push down on the lens fastening lever to tighten the ring and secure the lens. Then replace the lens mount lever stopper removed in step 1.



5 Checking the position of the ◀ mark on the connector, insert it into the LENS connector on the camera until it locks. Thread and fix the cable along the clamps.

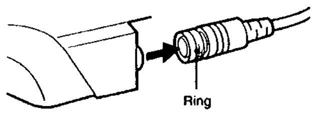


When the lens cable has a 6-pin connector

The LENS connector of this unit is a 12-pin connector. If your lens cable has a 6-pin connector, use an LO-612 (by Canon) or ECF-124 (by Fujinon) conversion cable.

Detaching a lens

Follow the lens attaching procedures in the reverse sequence.
To remove the connector from the LENS connector, pull out the connector while holding the ring.

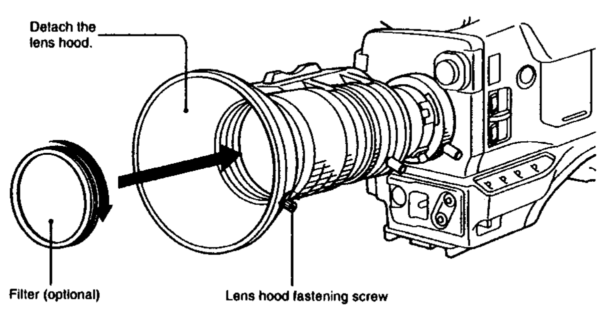


Removing the lens connector

Attaching the Basic System Components

Attaching an optional filter

Loosen the lens hood fastening screw and detach the lens hood. Then screw the filter clockwise along the threads in the lens barrel.



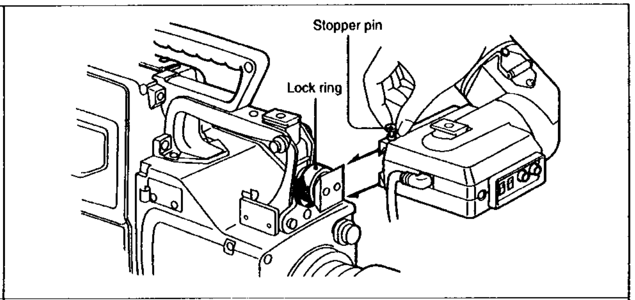
Attaching an optional filter

Attaching a Viewfinder

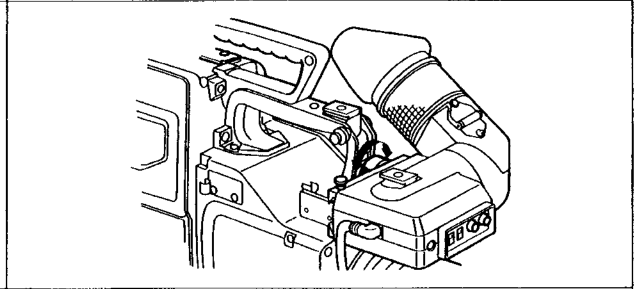
The viewfinder in the DXC-537AK/537AL/537APK/537APL kit is already attached. If your kit does not include a viewfinder, attach an optional viewfinder. This section explains how to attach the DXF-501/501CE viewfinder.

Attaching the viewfinder

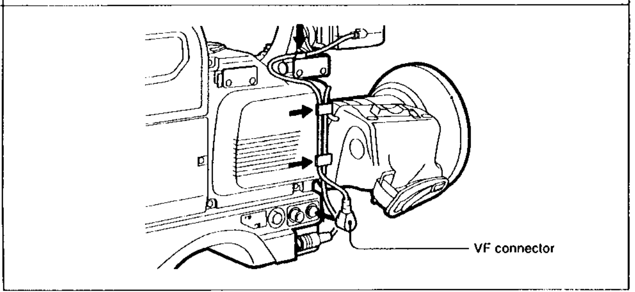
1 Loosen the lock ring. While pulling up on the stopper pin, align and guide the viewfinder along the viewfinder attachment.



2 Turn and tighten the lock ring to fasten the viewfinder.



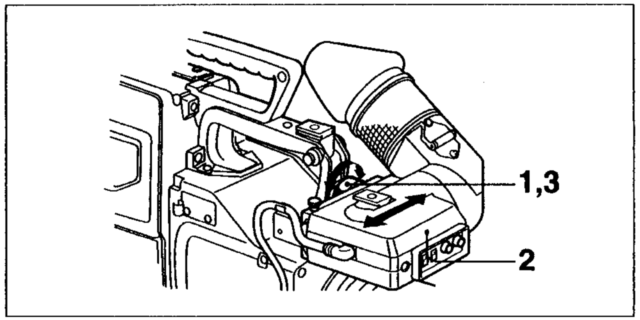
3 Connect the viewfinder connector cable to the VF connector on the camera. Fasten the cable along the clamps.



Adjusting the viewfinder position

You can adjust the position of the viewfinder in every direction (right and left, up and down, and front and back). Adjust it to the most comfortable position.

Adjusting to the left or right



Adjusting the viewfinder position to the left or right

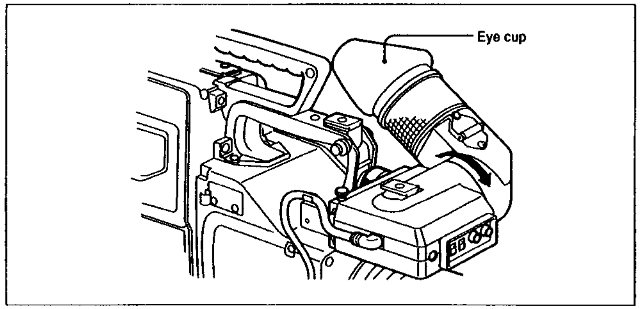
1 Loosen the lock ring.

2 Looking through the eye cup, slide the viewfinder sideways to the most convenient position.

3 Tighten the lock ring.

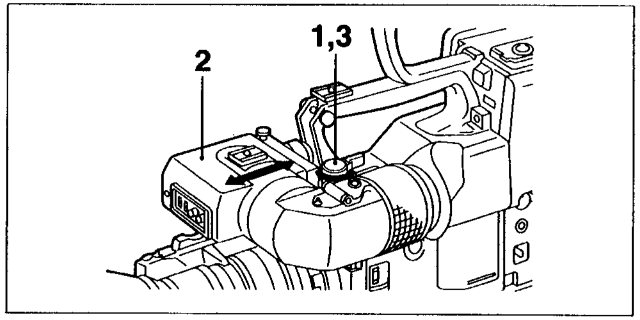
Adjusting the angle

Adjust the angle of the eye cup by tilting it up or down.



Adjusting the viewfinder angle

Adjusting front or back

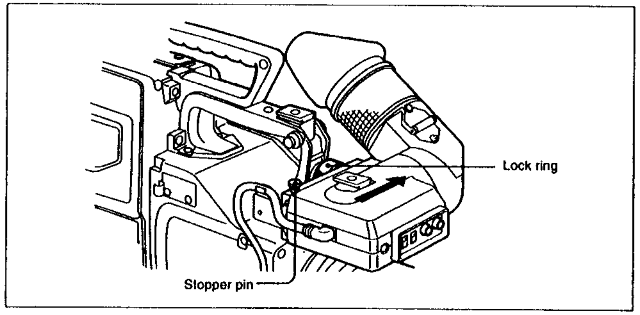


Adjusting the viewfinder position front or back

1. Loosen the LOCK lever.
2. Slide the viewfinder front or back.
3. Tighten the lever.

Detaching the viewfinder

Loosen the lock ring, and while pulling up on the stopper pin, slide the viewfinder to the right to detach it.



Detaching the viewfinder

Packing in the carrying case

The camera head can be packed with the viewfinder attached.
When packing, tilt down the eye cup, and slide the viewfinder back and to the left all the way.

Attaching the Basic System Components

Attaching a Microphone

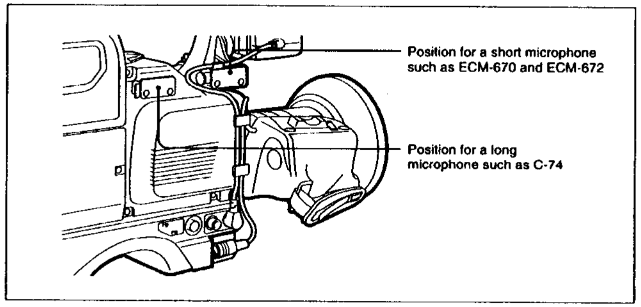
DXC-537AK/537AL/537APK/537APL kit: The CAC-12 microphone holder and the ECM-670 microphone are already attached. Attach the supplied wind screen to the microphone, if necessary.
If you exchange the microphone for a long one such as the C-74, detach the microphone holder and reattach it to the position for a long microphone. Then attach the microphone.

DXC-537AH/537APH kit: Attach the CAC-12 microphone holder and a microphone (neither supplied). Choose where to attach the CAC-12 depending on the length of your microphone.
This section explains how to attach the CAC-12 microphone holder, and the microphone supplied with the video camera kit as an example.

Attaching the microphone holder

Positions to attach the microphone holder

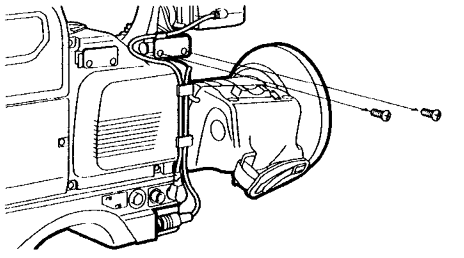
This unit is provided with two positions for the microphone holder. Choose the appropriate position according to the length of your microphone.


Position for a short microphone such as ECM-670 and ECM-672
Position for a long microphone such as C-74

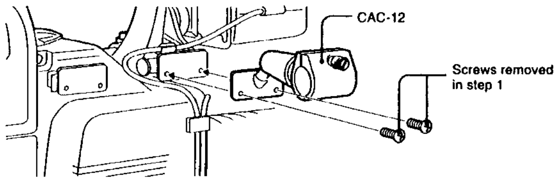
Positions to attach the microphone holder

Attaching the microphone holder

1 Remove the two screws from one of the two positions for the microphone holder.

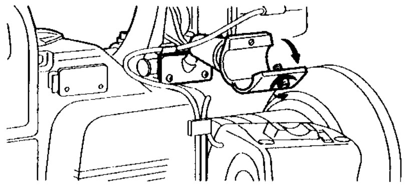


2 Attach the CAC-12 microphone holder using the screws removed in step 1.

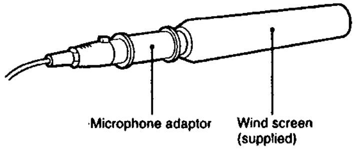


Attaching a microphone

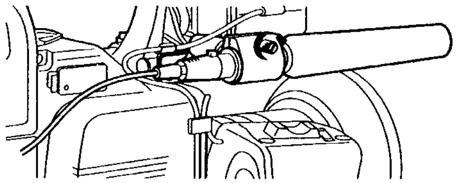
1 Loosen the microphone holder bolt and open the holder. (If your microphone holder is not the supplied one, take out the microphone adaptor from the holder.)



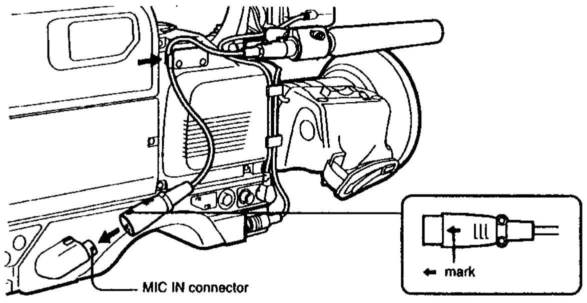
2 For the ECM-670, attach the microphone adaptor to the grip. (It is not necessary for the ECM-672 and C-74.)



3 Insert the microphone into the microphone holder, close the holder and tighten the bolt.

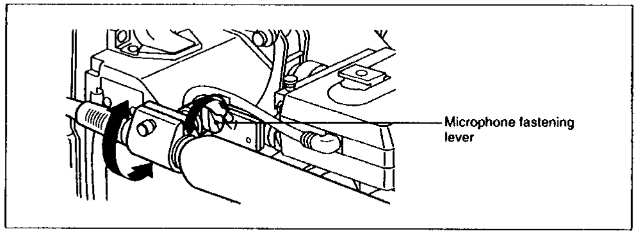


4 Checking the ⬅ mark on the connector, insert the microphone cable connector into the MIC IN connector until it locks. Fix the cable along the clamp.



Adjusting the position of the microphone

Loosen the microphone fastening lever, adjust the position of the microphone and tighten the lever.



Adjusting the position of the microphone

Detaching the microphone

Follow the microphone attaching procedures in the reverse sequence.
To remove the cable from MIC IN connector, pull out the cable while pressing the button on the connector.

Packing in the carrying case

The camera head can be packed with the microphone attached.
Loosen the microphone fastening lever, lower the microphone fully, and tighten the lever.

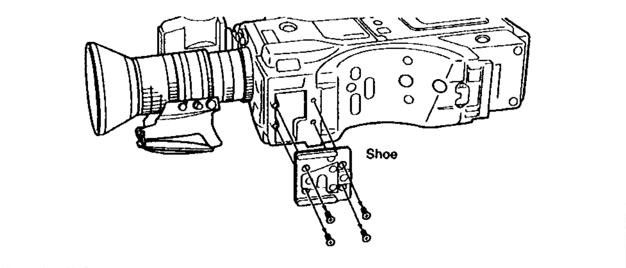
Attaching the Basic System Components

Attaching the Chest Pad

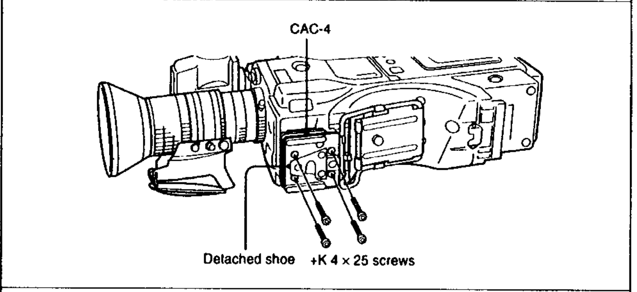
The use of the CAC-4 chest pad (optional) gives you steadier support for the camera.

Attaching the chest pad

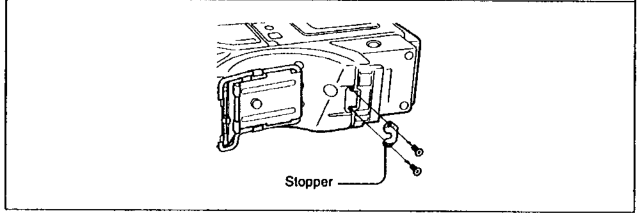
1 Detach the shoe from the bottom of the camera.



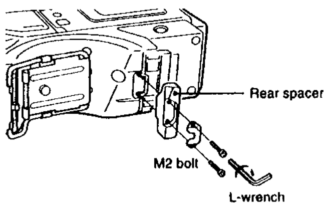
2 Place the chest pad between the shoe and the bottom of the camera and tighten them with four screws (+K 4 × 25) supplied with the CAC-4.



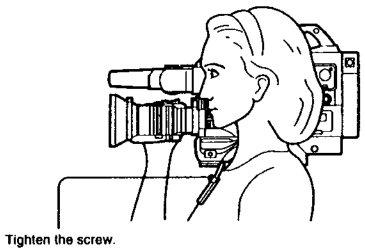
3 Detach the stopper from the bottom of the camera.



4 Insert the rear spacer (supplied with the CAC-4) onto the stopper, and tighten them with two screws (M2 bolts with hexagonal hole, supplied with the CAC-4) using an L-wrench.



5 Carry the camera on the shoulder, adjust the angle of the chest pad, and tighten the screw.


Tighten the screw.

When the chest pad is not in use

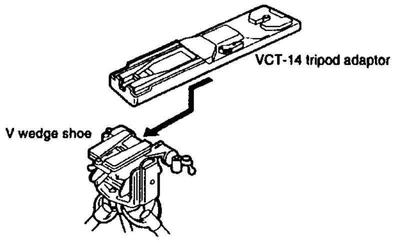
Loosen the screw, place the pad against the bottom of the camera and tighten the screw.

Attaching a Tripod

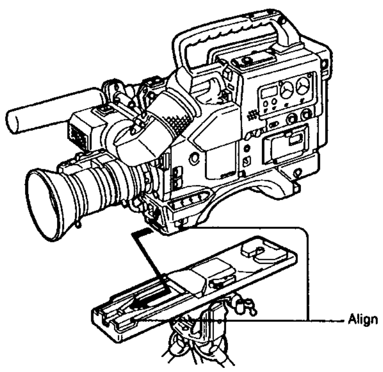
Fit the camera to the VCT-14 tripod adaptor and attach it to a tripod for stable operation.

Attaching the camera to a tripod

1 Attach the V wedge (supplied with the tripod) to the tripod adaptor, and insert the V wedge into the V wedge shoe on the tripod.
If the tripod does not have the V wedge shoe, fit the screw at the top of the tripod stand into one of the holes in the tripod adaptor. Choose the hole that fits the screw and gives the best balance.

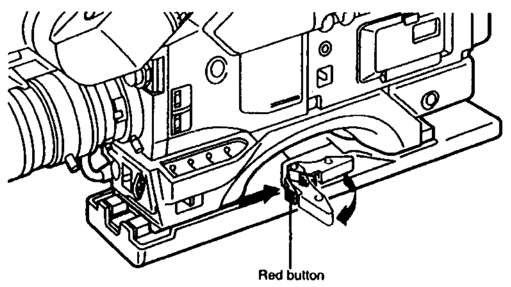


2 Slide the camera forward along the adaptor grooves until the camera clicks into place.



Detaching the camera from the tripod

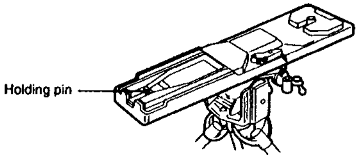
While pressing the red button, push the lever in the direction indicated by the arrow and detach the camera from the adaptor by sliding it backward.



Detaching the camera from the tripod

After detaching the camera

If the holding pin does not go to its stowed position, press the red button against the lever and move the lever in the direction of the arrow until the pin drops down. Otherwise, you cannot remount the video camera onto the tripod adaptor.



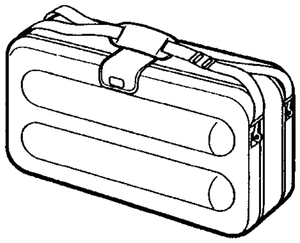
Returning the holding pin to its stowed position

Attaching the Basic System Components

Using the Soft Case and Rain Cover

Using the soft case

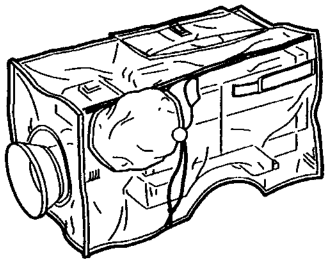
Use an optional LC-304SFT soft case when you want to carry the camera conveniently.



LC-304SFT soft case

Using the rain cover

Using an optional LCR-1 rain cover, you can operate the camera even in drizzling rain. (However, please note that the rain cover is not waterproof.)



LCR-1 rain cover

Connecting a Portable VTR

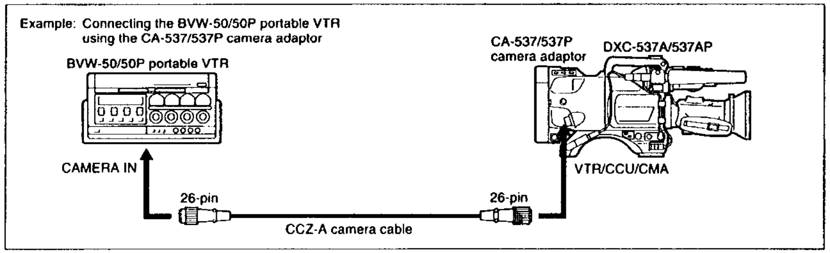
Use an optional CA-537/537P or CA-327/327P camera adaptor to connect a portable VTR. Depending on the connected VTR, set the VTR SELECT switch on the camera adaptor to the correct position.
For VTRs and their matching camera adaptor and camera cable, see page 2-4.

Check Before Connecting

Make sure the power switches on the camera, camera adaptor, VTR and other equipment are set to OFF.

Connection Diagram

Using a camera cable, connect the CAMERA IN connector of the portable VTR to the VTR/CCU/CMA connector on the camera adaptor.


Example: Connecting the BVW-50/50P portable VTR using the CA-537/537P camera adaptor
BVW-50/50P portable VTR
CA-537/537P camera adaptor
DXC-537A/537AP
CAMERA IN
VTR/CCU/CMA
26-pin
26-pin
CCZ-A camera cable

Connecting example for a portable VTR

About the camera cable

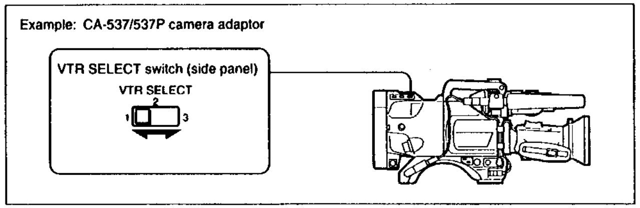
- Use a camera cable that fits the CAMERA IN connector of the VTR to be connected. *(See page 5-10.)*
- The camera cable can be extended up to 10 meters (33 feet). For details, please consult your Sony dealer.
- When connecting a VTR made by a manufacturer other than Sony, please consult your Sony dealer.

About the video monitor

- If you use an S-VHS VTR, use of a video monitor with S video connectors is recommended. Connect a cable between the S video output connector* of the VTR and the S video input connector of the monitor to get pictures of high resolution.
- The signal from the VIDEO OUT connector of the DXC-537A/537AP is a composite video signal. Connect the VIDEO OUT connector to a composite video input connector of the monitor.

Setting the VTR SELECT switch on the camera adaptor

The VTR SELECT switch on the camera adaptor selects the type of the video output signal from the VTR/CCU/CMA connector and the microphone output level. Set it correctly depending on the connected VTR.


Example: CA-537/537P camera adaptor
VTR SELECT switch (side panel)
VTR SELECT
1
2
3

Setting the VTR SELECT switch on the camera adaptor

Setting the VTR SELECT switch on the CA-537/537P

VTR to be connected	Position of the VTR SELECT switch	Video output signal	Microphone output level
Sony VTR for broadcasting, business and institutional use (BVU-150/150P, VO-6800/6800PS[1], BVW-50/50P, BVV-5/5PS)	1	Composite (BVU-150/150P, VO-6800/6800PS) or component (BVW-50/50P, BVV-5/5PS)	–60 dB
Sony VTR for business and institutional use (VO-8800/8800P, EVV-9000/9000P)	3	Y/C	–60 dB
Panasonic VHS format VTR (AG-6400)	2	Composite	–20 dB
Panasonic S-VHS VTR (AG-7400[2]) JVC S-VHS VTR (BR-S405)	3	Y/C	–20 dB

Setting the VTR SELECT switch on the CA-327/327P

VTR to be connected	Position of the VTR SELECT switch	Video output signal	Microphone output level
Sony VTR for broadcasting, business and institutional use (BVU-150/150P, VO-6800/6800PS[1])	1	Composite	–60 dB
Sony VTR for business and institutional use (VO-8800/8800P, EVV-9000/9000P)	2	Y/C	–60 dB
Panasonic VHS format VTR (AG-6400)	3	Composite	–20 dB
Panasonic S-VHS VTR (AG-7400[2])	4	Y/C	–20 dB

---

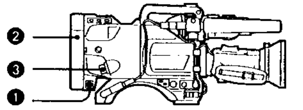
1) Set the microphone level on the VO-6800/6800PS to –60 dB.

2) Set the input selector on the AG-7400 to Y/C.

Power Sources

The DXC-537A/537AP is powered by one of the following power supplies:
❶ Power supplied through the DC IN connector of the dockable VTR or camera adaptor.
❷ Battery pack installed in the dockable VTR or camera adaptor.
❸ Power supplied through the VTR/CCU/CMA connector of the camera adaptor.

The power is supplied to the 50-pin connector of the camera through the VTR or camera adaptor.



Example: When using a camera adaptor

Priority of power sources

When two or three power sources (❶ to ❸ above) are connected simultaneously, the camera operation only uses one of the power supplies according to the following priority, ❶, ❷ and ❸. The other power sources are automatically cut off.

Using a Battery Pack

Insert a battery pack, such as the NP-1B/1A (optional), into the battery case of a dockable VTR or camera adaptor.

Charging a battery pack

Charge the battery pack before each use using the battery charger shown in the table below.

Battery chargers and charging time

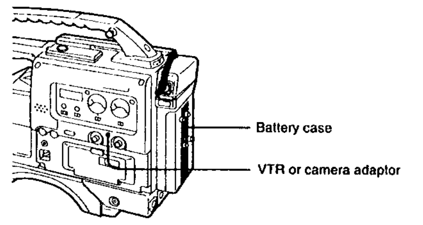
Battery pack	Battery charger	Charging time (at 25°C)
NP-1B	BC-1WA[1]/1WB or BC-410/410CE	Approx. 95 min.
NP-1A	BC-1WA[1]/1WB or BC-410/410CE	Approx. 70 min.
BP-90A	BC-410/410CE/210	Approx. 160 min.

---

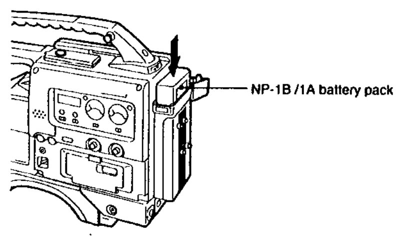
[1] The BC-1WA battery charger cannot charge the NP-1B sufficiently.

Installing the battery pack

1 Open the battery case lid.



2 Insert the battery pack into the battery case and close the lid.



Continuous battery operation time

A fully charged battery pack can continuously power the camera and the DXF-501/501CE viewfinder for a certain amount of time.
The following table shows the continuous camera operation time or continuous recording time at 25°C, using a fully charged battery pack.

Camera operation time using a battery pack

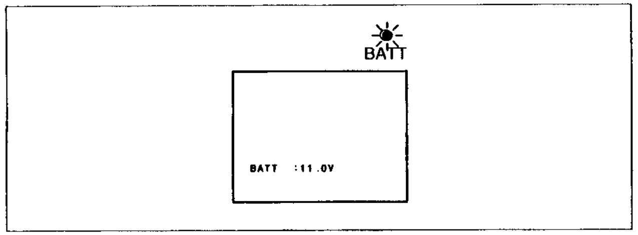
Equipment to be used / Battery pack	Operation with a camera adaptor	Recording with EVV-9000/9000P	Recording with PVV-1/1P
NP-1A	Approx. 80 min.	Approx. 50 min.	Approx. 45 min.
NP-1B	Approx. 105 min.	Approx. 70 min.	Approx. 65 min.
BP-90A[1]	Approx. 245 min.	Approx. 160min.	Approx. 150 min.

---

[1] The DC-210 battery case is required to use the BP-90A with the camera adaptor.

Battery indicator

When the battery is nearly exhausted, the battery voltage value (11.0 V or less) appears on the viewfinder screen. If you continue to operate the equipment without changing the battery, the BATT indicator in the viewfinder also lights up to indicate that the battery must be replaced immediately.



Battery indicator

Notes on using the battery pack

- Do not touch any metal object to the metal parts of the battery pack.
- Turn off the power before changing the battery pack.

Tips for using the NiCd battery pack

On battery duration

- Battery duration is shortened in a cold environment.
- Battery duration is shortened if the metal parts (terminals) are not clean.

On charging

- Charge the battery at temperatures from 5°C to 40°C (from 41°F to 104°F). Lower temperatures require a longer charging time. Besides, the battery cannot be charged fully if the battery pack is heated up (more than 40°C) just after use.
- Charge the battery pack a day before each use, since the battery will discharge if it is installed in the VTR or camera adaptor with the power off.
- Charge the battery pack after it is used up completely. Repeated charging of a still usable battery will cause lowering its capacity.
- If the capacity of the battery pack is lowered due to light charging and discharging cycles, discharge it completely, and then charge it sufficiently. This will recover the battery capacity.
- If the battery pack is not used for a long time, the battery duration will be shorter than normal even after a full charge. The duration, however, will recover after several charging and discharging cycles.
- A battery pack can be fully charged and discharged about 300 to 500 times.

On storage

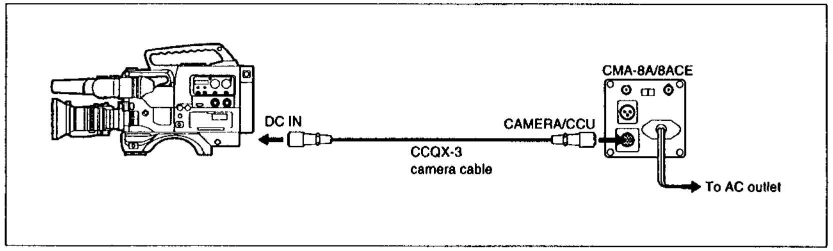
Store battery packs in a cool, dry place.

Using an AC Power Supply

To operate the camera on AC power, connect the power sources as follows:

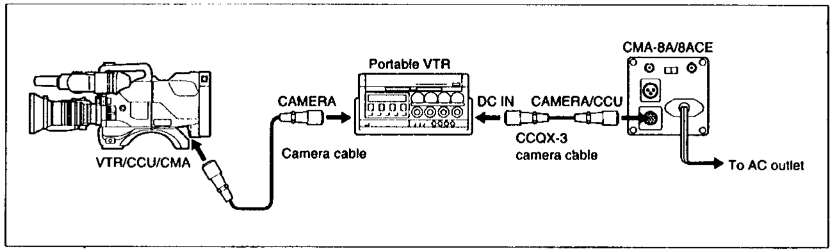
To power the camcorder system

Connect the CMA-8A/8ACE camera adaptor to the DC IN connector of the dockable VTR and to an AC outlet.



To power the portable VTR system

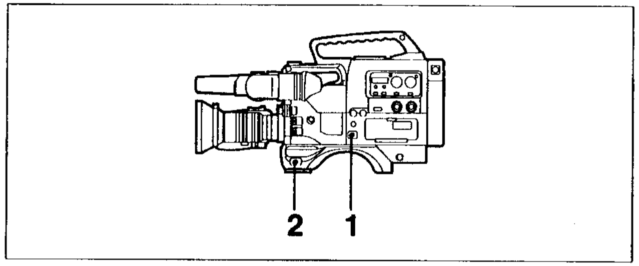
Connect the portable VTR to the VTR/CCU/CMA connector of the camera using an appropriate camera cable. Then connect the CMA-8A/8ACE camera adaptor to the VTR and to an AC outlet.



Turning on the Power

After you attach and connect other equipment, turn on the power.

When using a camcorder system

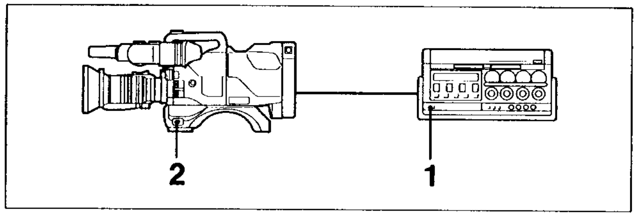


Turning on the power of a camcorder system

1 Set the POWER switch on the VTR to ON.
The power is supplied to both the VTR and the camera.

2 Set the POWER switch on the camera to ON SAVE or ON STBY. The camera is turned on and the image is shown in the viewfinder.

When using a portable VTR system



Turn on the power of a portable VTR system

1 Set the POWER switch on the VTR or camera control unit to ON.
The power is supplied to the camera.

2 Set the POWER switch on the camera to ON SAVE or ON STBY. The camera is turned on and the image is shown in the viewfinder.

Turning on the Power

Functions of the POWER switch on the camera

The POWER switch has three positions.

Functions of the POWER switch

Position	Functions
OFF OFF ←ON→ ←SAVE→ STBY	Turns the camera off.
ON SAVE OFF ←ON→ ←SAVE→ STBY	Select to save power. The VTR enters power saving mode (drum heads do not rotate). It saves battery power when adjusting the camera or when the VTR is not used during a rehearsal. When you press the VTR button in this mode, there is a delay of a few seconds before recording starts. It is useful when you do not need to start recording immediately.
ON STBY OFF ←ON→ ←SAVE→ STBY	Select for a standby mode. The camera is turned on and the VTR stands ready for recording. When you press the VTR button on the camera, lens or camera adaptor, recording starts immediately. It is convenient when you do not want to miss important scenes.

Note

The functions of the VTR in the ON SAVE and ON STBY modes differ depending on the VTR. For example, even if the switch is set to ON SAVE, the EVV-9000/9000P is not in the power saving mode. Please see the manual of the VTR.

Adjustments Before Shooting

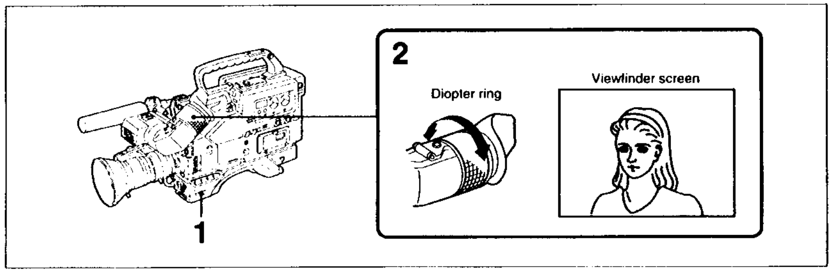
This section explains the adjustments necessary before shooting. Do not fail to make these adjustments when you use the camera for the first time. From the second time on, make the adjustments as necessary, according to the following table.

Type of adjustments before shooting

Type of adjustments	Adjustment is necessary when:
Adjusting the diopter of the viewfinder	the camera operator changes.
Adjusting the contrast and brightness of the viewfinder	the lighting condition changes.
Adjusting the color of the video monitor	• the lighting condition changes. • the distance between the monitor and the camera operator changes. • the monitor is changed.
Adjusting the flange focal length of the lens	the lens is changed. (The DXC-537AK/APK includes the lens and the adjustment is made at the time of shipment.)

Adjusting the Diopter of the Viewfinder*

Because the eyesight of each individual is different, it may be necessary to adjust the diopter[1] whenever a new camera operator uses the viewfinder. Turn the diopter ring inside the eye piece to adjust.



Adjusting the diopter of the viewfinder

1. Set the POWER switch to ON SAVE.
   An image appears on the viewfinder screen.
2. Turn the diopter ring so that you can see the image on the viewfinder screen clearly.

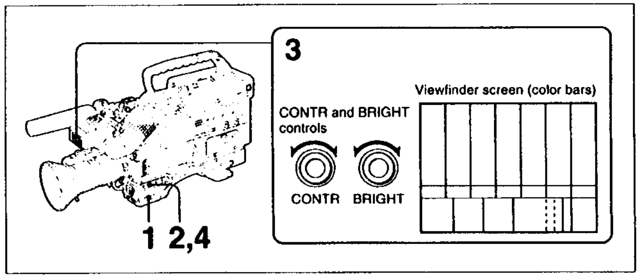
The range of the diopter is –1D to –3D. (Some individuals may not notice the difference in adjustment due to their eye flexibility.)

---

[1] **Diopter**
A unit to indicate the degree of convergence or divergence of a bundle of rays.
–1D is set at the time of shipment.

Adjusting the Contrast and Brightness of the Viewfinder

Adjust the contrast and brightness using the color bar signals on the viewfinder screen. The adjustment does not affect the video output signal of the camera.



Adjusting the contrast and brightness of the viewfinder

1. Set the POWER switch to ON SAVE.
2. Set the OUTPUT switch to BARS.
   The color bar signals are displayed on the viewfinder screen.
   (If TONE SET is ON on the menu display, the audio reference signal sounds.)
3. Adjust the contrast and brightness using the CONTR and BRIGHT controls on the viewfinder while viewing the viewfinder screen.
4. After adjustment, set the OUTPUT switch to CAM.

About the iris after adjustment

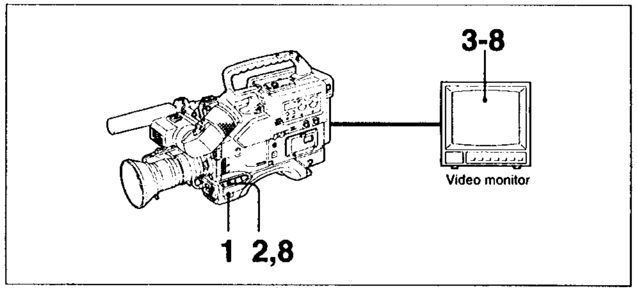
When you set the OUTPUT switch to BARS, the camera automatically changes to shading mode If the iris selector on the lens is set to M (manual), the camera remains in the shading mode even if the OUTPUT switch is set back to CAM. Open the iris before you start shooting.

Adjusting the sharpness on the viewfinder

Set the PEAKING switch on the viewfinder to ON.
The image on the viewfinder screen sharpens so that the lens can be focused easily.

Adjusting the Color of the Video Monitor

Adjust the color tone and brightness (black level) of the monitor using the color bar signals (SMPTE[1] color bars) in the camera. Readjust the brightness when the lighting conditions or the distance between the monitor and the camera operator changes.



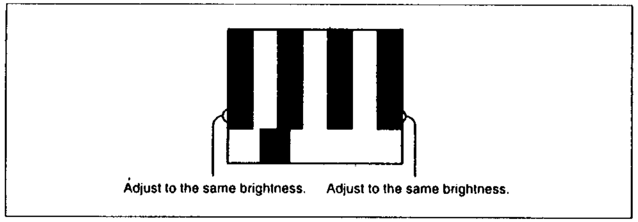
Adjusting the color of the video monitor

1 Set the POWER switch on the camera to ON SAVE.

2 Set the OUTPUT switch on the camera to BARS.
The color bar signals are displayed on the monitor screen.
(If TONE SET is ON on the menu display, the audio reference signal sounds.)

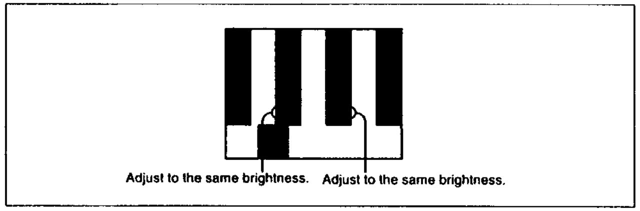
3 Set the BLUE ONLY switch on the monitor to ON.
Monitor screen turns to blue monochrome and blue stripes appear.

4 Adjust the two bars as indicated below with the CHROMA control on the monitor so that they have the same brightness.


Adjust to the same brightness.
Adjust to the same brightness.

Brightness adjustment by CHROMA control

5 Adjust the two bars as indicated below with the PHASE control on the monitor so that they have the same brightness.

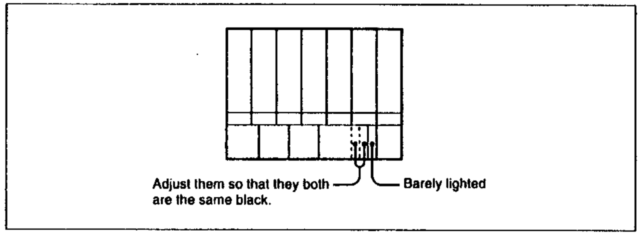

Adjust to the same brightness.
Adjust to the same brightness.

Brightness adjustment by PHASE control

6 Repeat procedures 4 and 5 until the four bars have the same brightness.
When they are the same, the adjustment of color tone is finished.

7 Return the monitor to the normal mode.

8 Adjust the brightness of the bars as indicated below with the BRIGHT control on the monitor.



Brightness adjustment by BRIGHT control

The adjustment of the brightness (black level) is now finished.

9 Set the OUTPUT switch on the camera to CAM.

About the iris after adjustment

When you set the OUTPUT switch to BARS, the camera automatically changes to shading mode. If the iris selector on the lens is set to M (manual), the camera remains in the shading mode even if the OUTPUT switch is set back to CAM. Open the iris before you start shooting.

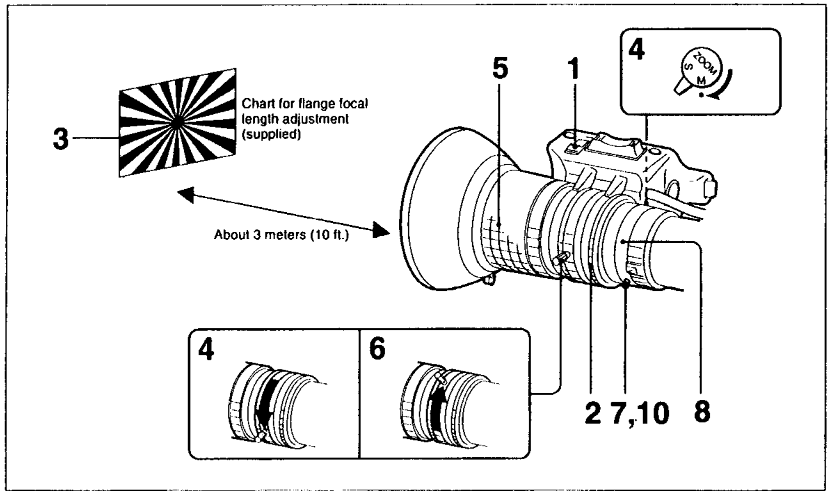
---

[1] **SMPTE**
Abbreviation for the Society of Motion Picture and Television Engineers

Adjusting the Flange Focal Length* — When the Lens is Changed

Flange focal length means the length between the lens attachment surface and the image formation surface. Adjust the flange focal length without fail when:
- you mount a lens for the first time (The DXC-537AK/537APK kit includes a lens and the adjustment is already made at the time of shipment.)
- you change a lens
- the lens does not stay properly in focus both at the wide-angle and telephoto positions when using the zoom.

Once you have made the flange focal length adjustment, you do not have to readjust the lens as long as the lens stays on the camera.



Adjusting the flange focal length

1. Set the iris selector to M.
2. Open the iris by turning the iris ring.
   This provides a shallow depth of field and easy observation of focusing.
3. Position the supplied chart for flange focal length adjustment about 3 m (10 ft) away from the camera, and light it enough to provide a sufficient video output level (about 80 IRE* for NTSC or 560 mV for PAL, on the waveform monitor).
4. Set the ZOOM selector to M (manual) and turn the manual zoom lever to the telephoto position.

5. Focus on the chart by turning the focus ring.
6. Turn the manual zoom lever to the wide-angle position.
7. Loosen the screw on the Ff adjustment ring.
8. Turn the Ff adjustment ring and focus on the chart. Be careful not to disturb the focus ring.
9. Repeat procedures 5 through 8 until the chart is in focus both at the telephoto and wide-angle positions.
10. Tighten the screw on the Ff adjustment ring.

For more precise adjustment
Use a waveform monitor. The highest wave amplitude is the point in focus.

For adjusting outdoors
If it is too bright to open the iris, use a high-speed shutter or an ND filter*.

Chapter 3
Shooting
— Basic Operations

This section explains how to shoot using the automatic adjustments of this camera. It also explains the black balance and white balance adjustments which are required in all the color adjustments of the camera.
Basic operations for the camcorder system and portable VTR system are explained here. For other systems, also see Chapter 5.

Basic Shooting/Recording **3-2**
  Setting the Switches/Selectors 3-2
  Videotaping Operations 3-4
Adjusting the Black Balance **3-7**
Adjusting the White Balance **3-9**
  Memorizing the Correct White Balance Values 3-9
  Using a Preset White Balance Value 3-12
  Using the ATW (Auto Tracing White Balance) Function 3-13
  Tips on the White Balance Adjustment 3-14
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  Close-ups 3-17

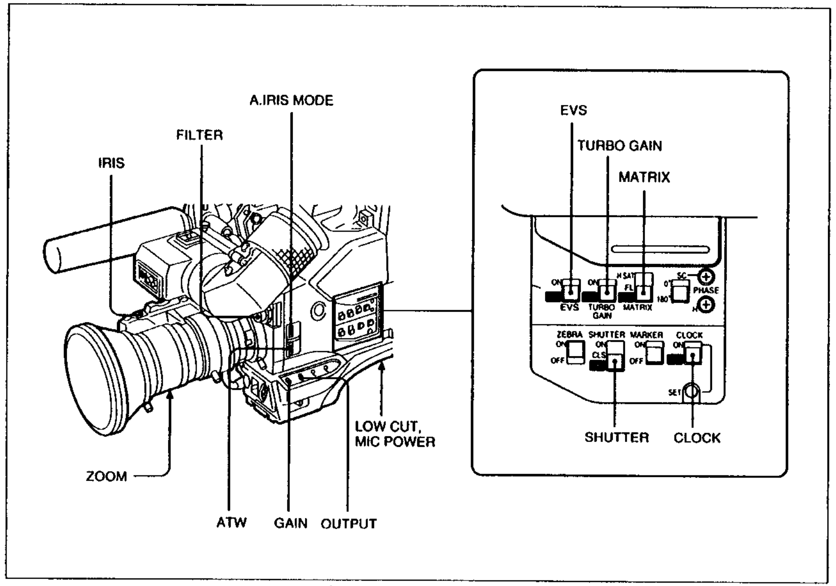
Basic Shooting/Recording

This section explains how to shoot simply using the automatic adjustment functions of the camera. In order to make full use of the camera, it is necessary to make various adjustments depending on the shooting conditions. *(See chapter 4.)*

The operating procedures are as follows:
❶ Check that all the switches/selectors on the camera are set to the standard position.
❷ Point the camera at an object.
❸ Start/stop recording.

Setting the Switches/Selectors

- Check that the switches/selectors are set to the following positions:



Setting the switches/selectors

Standard position of the switches/selectors

	Switch/selector	Standard position	Remarks	See page
Camera	A. IRIS MODE	STD	———	4-7
	ATW	OFF	Set to ON when the white balance needs to be adjusted immediately.	3-13
	GAIN	LOW	———	4-5
	OUTPUT	CAM (DCC ON)	———	4-7
	EVS	OFF	———	4-7
	TURBO GAIN	OFF	———	4-6
	MATRIX	STD	Set to FL under the fluorescent lights.	4-7
	SHUTTER	OFF	———	4-12
	CLOCK	OFF	———	4-19
	LOW CUT	OFF	Set to ON when the microphone picks up too much noise caused by the wind.	—
	MIC POWER	ON	Set to OFF when using a microphone that does not use the external power supply system.	—
	FILTER	The best position	Select depending on the light sources.	3-3
Lens	Iris selector	A (auto)	———	4-2
	ZOOM	S (servo)	———	3-16

Selecting the optical filters

Select the position of the FILTER selector depending on the lighting conditions of the subject.

Position of the FILTER selector and lighting conditions

Position of the FILTER selector		Lighting conditions
1	3200 K	Halogen lamp for studio use, tungsten lamp (incandescent bulb), sunrise and sunset.
2	5600 K + 1/4 ND¹⁾	Bright outdoors The amount of light is attenuated to 1/4 (two stops down on the iris).
3	5600 K	Cloudy or rainy outdoors, or under a fluorescent lamp.
4	5600 K + 1/16 ND	In the open daylight. The amount of light is attenuated to 1/16 (four stops down on the iris). Used to prevent hunting* or to decrease the depth of field*.

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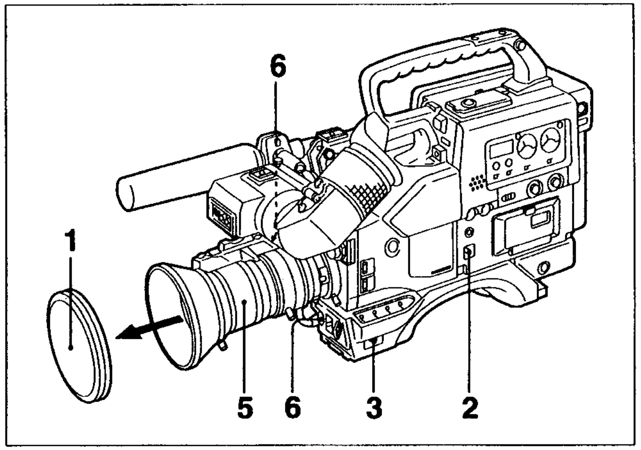
1) **ND**
An ND (Neutral Density) filter*. It reduces the amount of incident light.

Videotaping Operations



Videotaping operations

1 Remove the lens cap.

2 Set the POWER switch on the VTR to ON.

3 Set the POWER switch on the camera to ON STBY or ON SAVE.

Setting the POWER switch

Position of POWER switch	Operating conditions
ON STBY	The camera is turned on and the VTR stands ready for recording. When you press the VTR button on the camera, lens or camera adaptor, recording starts immediately.
ON SAVE	The camera is turned on and the VTR enters the power saving mode (drum heads do not rotate). When you press the VTR button in this mode, recording starts in several seconds.

Note

The functions of the VTR in the ON SAVE and ON STBY modes differ depending on the VTR.

4 Point the camera at an object.

- When taking close-ups of a subject that is at a close distance of less than one meter, use the macro function. *(see page 3-17)*

5 Adjust the focus by turning the focus ring while looking at the image in the viewfinder (or video monitor).

- Use the zoom* to change the size of the subject. *(see page 3-15)*

6 Start recording by pushing one of the following buttons:
- When using a tripod: VTR button on the camera
- When carrying the camera on the shoulder: VTR button on the zoom lens
- Using a portable VTR system on a tripod: VTR START/RETURN VIDEO button on the camera adaptor

The REC/TALLY indicator inside the viewfinder lights during recording.

Pausing during recording

Press the VTR button. The REC/TALLY indicator disappears and the VTR stops recording temporarily (recording standby mode). To resume recording, press the VTR button again.

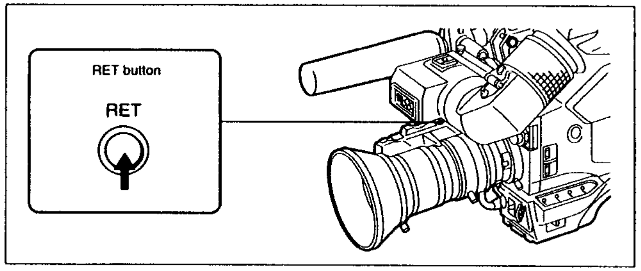
After shooting

Set the POWER switch on the camera and VTR to OFF.

Basic Shooting/Recording

Monitoring the image during recording

During recording, the image shot with the camera is displayed on the viewfinder. If you press the RET button on the lens, the viewfinder displays the image to be recorded on the VTR (return video*) while the button is being pressed. The display returns to the image of the camera when you release the button.



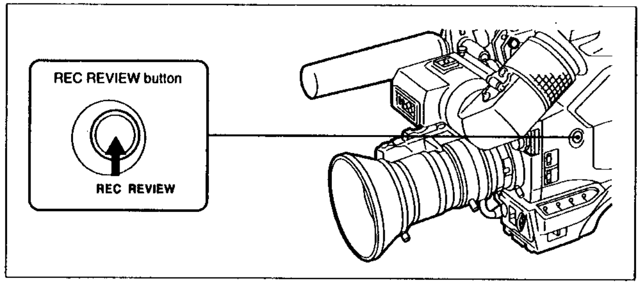
Monitoring the return video using the RET button

Note

This function does not operate with some VTRs.

Checking the last portion of the recording

You can monitor in the viewfinder the last few seconds of the tape you have just recorded.



Checking the recorded portion using the REC REVIEW button

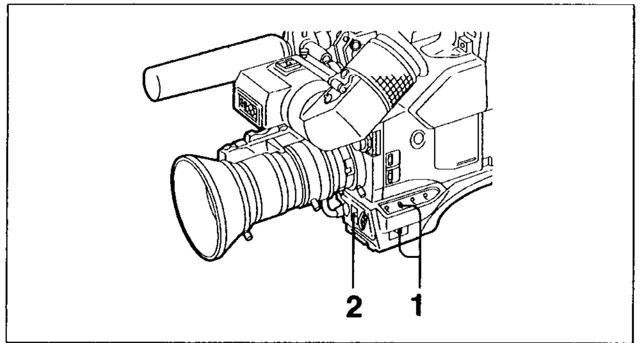
After making the VTR pause by pressing the VTR button, press the REC REVIEW button on the camera. The last few seconds before the VTR pauses are rewound automatically, and the viewfinder displays the played back image. When the VTR finishes playback, the VTR returns to the recording standby mode.

Note

This function does not operate with some VTRs.

Adjusting the Black Balance

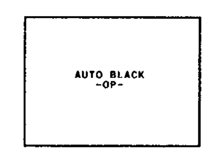
Adjust the black balance when the camera has not been used for a long period of time, or when the temperature has suddenly changed. The adjusted black balance value is retained in the memory of the camera and normally you do not need to readjust it even if you turn off the camera power or the lighting conditions change. When the black balance is adjusted, the black set* is also adjusted automatically.



Black balance adjustment

1 Set the POWER switch to ON SAVE, and OUTPUT switch to CAM.

2 Flip the AUTO W/B BAL switch to the BLK position.
The iris closes automatically and the black balance is adjusted automatically. During the adjustment, "AUTO BLACK -OP-" appears on the viewfinder screen.



Viewfinder display during black balance adjustment

A few seconds later, "AUTO BLACK -OK-" appears on the viewfinder screen, when adjustment is complete. The adjustment value is automatically retained in the memory.

Note

When the W/B BALANCE switch on the camera control unit is set to MANUAL, you cannot adjust the black balance from the camera.

If the black balance cannot be adjusted

"AUTO BLACK -NG-" appears on the viewfinder screen. Readjust the black balance after you take the appropriate measures.

Error messages for the black balance adjustment

Error message	Meaning and countermeasures
AUTO BLACK -NG- : IRIS NOT CLOSED TRY AGAIN	The iris was not closed during the black balance adjustment. Check the lens and its connections. If the black balance still cannot be adjusted, call your Sony dealer.
AUTO BLACK -NG- : ?? TRY AGAIN	The iris was opened during black balance adjustment, or a hardware error occurred. Close the iris and try the adjustment again. If the black balance still cannot be adjusted, call your Sony dealer.
BARS	The color bar signal is output. Set the OUTPUT switch to CAM.

About the iris after the adjustment

The iris of the lens automatically closes during black balance adjustment. If the iris selector is set to M (manual), the iris remains closed after the adjustment. Therefore, open the iris before shooting.

Readjustment of the black balance

Readjust the black balance if:

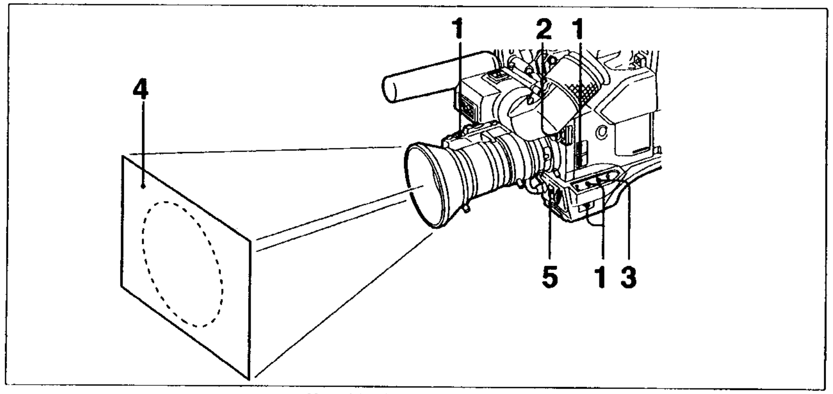
- "MEMORY NG" appears on the viewfinder screen
- the unit has not been used for a long time
- the ambient temperature has changed considerably.

Adjusting the White Balance

The white balance should be adjusted so that a white object is reproduced as white and life-like color is obtained. The white balance changes depending on the lighting conditions. When the lighting conditions change, readjust the white balance.

Memorizing the Correct White Balance Values

You can store the adjusted white balance values in the two memories of "A" and "B". The values are retained even if the power of the unit is turned off. Once the values are memorized, you can recall either of them by setting the WHITE BAL selector to A or B. It is convenient when you shoot under two different lighting conditions.



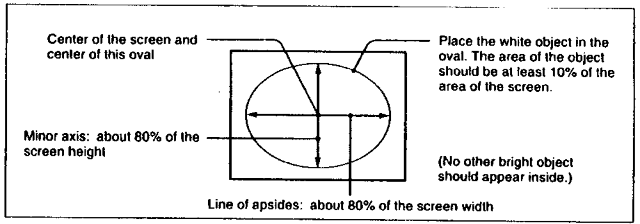
Memorizing the white balance value

1 Set the positions of the switches/selectors on the camera as follows:
- Set the POWER switch to ON SAVE.
- Set the OUTPUT switch to CAM.
- Set the iris selector on the lens to A (auto).
- Set the ATW switch to OFF.

2 Select the position of the FILTER selector on the camera according to the lighting conditions.

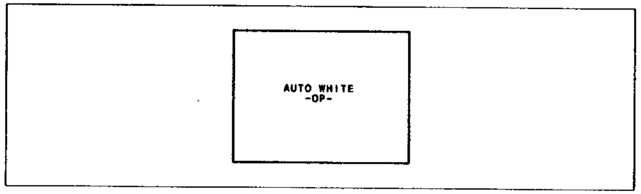
3 Set the WHITE BAL selector to A or B.

4 Zoom up on a white object such as a white cloth or paper under the same lighting conditions as those of the scene to be shot.
The minimum white area required for adjustment is as follows:


Center of the screen and center of this oval
Place the white object in the oval. The area of the object should be at least 10% of the area of the screen.
Minor axis: about 80% of the screen height
(No other bright object should appear inside.)
Line of apsides: about 80% of the screen width

The minimum white area required for white balance adjustment

5 Flip the AUTO W/B BAL switch to WHT.
White balance is automatically adjusted.
During the adjustment, "AUTO WHITE -OP-" appears on the viewfinder screen.


AUTO WHITE
-OP-

Viewfinder display during white balance adjustment

When the display changes to "AUTO WHITE -OK-" after a few seconds, the adjustment is complete. The camera automatically stores the adjusted white balance value in the specified memory, A or B.

If you want to set the white balance value for another lighting condition, repeat procedures 2 through 4. The camera can memorize two white balance values, A and B.

Recalling the white balance value from the memory
Set the WHITE BAL selector to A or B before you shoot with the camera. The white balance value in the memory is automatically recalled.
Even if the power is turned off, the camera holds the stored white balance value in memory for about 10 years unless the white balance is readjusted.

If an adjustment error occurs

If the unit fails to adjust the white balance, "AUTO WHITE -NG-" appears on the viewfinder screen.
Readjust the white balance after taking the appropriate measures indicated in the table below.

Error messages for the white balance adjustment

Error message	Meaning and countermeasures
AUTO WHITE -NG- LOW LIGHT TRY AGAIN	Light is insufficient. Increase illumination, open the iris or raise the video output level with the GAIN selector. Check also the FILTER selector setting. Try the adjustment again after taking the countermeasure.
AUTO WHITE -NG- : ?? TRY AGAIN	The object is not white or light is excessive. Replace with a white object. Decrease illumination, close the iris or reduce the video output level with the GAIN selector. Check also the FILTER selector setting. Try the adjustment again after taking the countermeasure.
AUTO WHITE -NG- : C. TEMP LOW CHG. FILTER TRY AGAIN	Color temperature is too low. Set the FILTER selector to 1 and try the adjustment again.
AUTO WHITE -NG- : C. TEMP HI CHG. FILTER TRY AGAIN	Color temperature is too high. Set the FILTER selector to 3 or 4 and try the adjustment again.
WHITE: PRESET	The WHITE BAL selector is set to PRE. Set the WHITE BAL selector to A or B.
BARS	The color bar signal is output. Set the OUTPUT switch to CAM.

Adjusting the White Balance

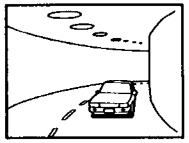
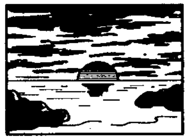
Using a Preset White Balance Value

The unit provides two preset white balance values. When you have no time to adjust the white balance, the preset values can provide an approximate adjustment for immediate shooting.
In some cases under special lighting conditions, using the preset values is more effective than adjusting the white balance due to the characteristics of the human eye.

1. Set the WHITE BAL selector to PRE.
2. Set the FILTER selector to position 1 for the 3200 K white balance.
   Set it to 3 for the 5600 K white balance.

Situations where the preset white balance is effective

Situations where the preset white balance is effective

Lighting conditions	Preset value
• Situations where lighting conditions frequently change, such as at a party.	3200 K (FILTER selector position 1)
• Shooting under a sodium lamp in a tunnel. 	
• Shooting sunrise or sunset outdoors. 	5600 K (FILTER selector position 3)

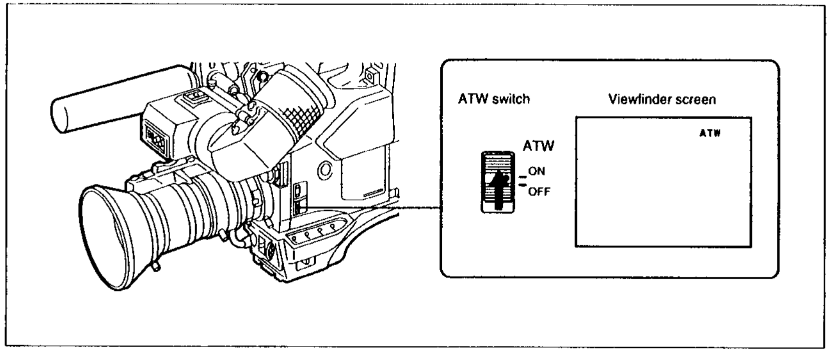
If you want to reproduce a scene more precisely, adjust the R and B signal levels using the RM-M7G remote control unit.

Using the ATW (Auto Tracing White Balance) Function

When you use the ATW function, the white balance varies automatically according to changes in the lighting conditions.

Note

The ATW function cannot provide perfect white balance adjustment. If you want to record a color of a subject correctly, we recommend that you to adjust the white balance with the AUTO W/B BAL switch.



Using the ATW function

Using the ATW function

Set the ATW switch to ON. The "ATW" display appears on the viewfinder screen. The white balance is held at its optimum level during recording, according to the changes in the color temperature of the subject.

Canceling the ATW function

Set the ATW switch to OFF. "ATW" disappears from the viewfinder screen.

If an error occurs

If the unit fails to obtain the optimum value with the ATW function, one of the following messages appears on the viewfinder screen. Take the measures listed in the table below.

Error messages for the ATW function

Error message	Meaning and countermeasures
C.TEMP LOW	Color temperature is too low. Set the FILTER selector to 1.
C.TEMP HI	Color temperature is too high. Set the FILTER selector to 3 or 4.

Adjusting the White Balance

Tips on the White Balance Adjustment

Light source and color temperature

In order to obtain an image with correct color, it is necessary to adjust the white balance according to the light source which lights the subject. The color of the light is determined by the temperature of the object radiating the light, and is expressed by the unit "K." As the temperature increases, the color of the light changes to blue, and as it decreases, to red.

This unit is adjusted at the factory so that the correct colors are obtained when a video light (halogen lamp, color temperature 3200 K) is used. When using the unit under different lighting conditions, adjustment is required. Before white balance adjustment, set the FILTER selector to select a lighting condition close to the current light. Use the following table for the adjustment of the color temperature.

Light source and color temperature

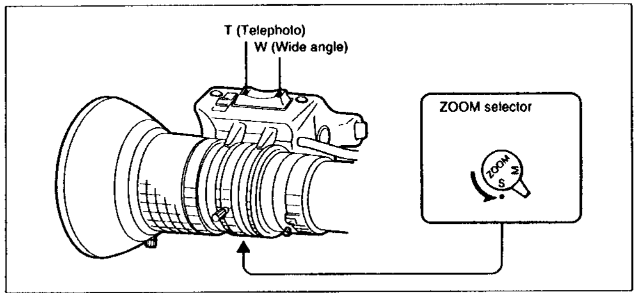
Light source		Color temperature (K)	
Natural light	Lighting		
Clear sky			10,000
Slightly overcast		Blue light	8,000
Cloudy, rainy			7,000
	Fluorescent lamp (daylight)		6,000
		White light	5,000
Direct sunlight, midday	Mercury lamp		
	Fluorescent lamp (white)		
1 hour before sunset or after sunrise			4,000
	Fluorescent lamp (off white)		3,500
	Studio lamp		3,200
	Halogen lamp, video light	Yellow light	3,000
30 min. before sunset or after sunrise	Tungsten lamp		2,500
	Sodium lamp (lights inside a tunnel)		
Sunset or sunrise	Candle light	Red light	2,000

Zooming

By using the motorized zoom, or by zooming manually, you can make the size of the subject large (telephoto shot) or small (wide-angle shot), without changing the position of the camera.
With the MACRO function, you can do close-ups of a small subject or very close subject.
This section explains zooming and close-ups, using the VCL-916BYA zoom lens supplied with the DXC-537AK/537APK as an example.

Motorized Zooming

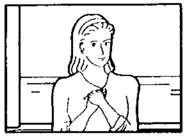
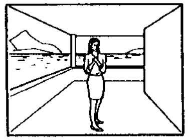
Motorized zooming allows you to change the size of an object in the viewfinder screen smoothly.



Motorized zooming

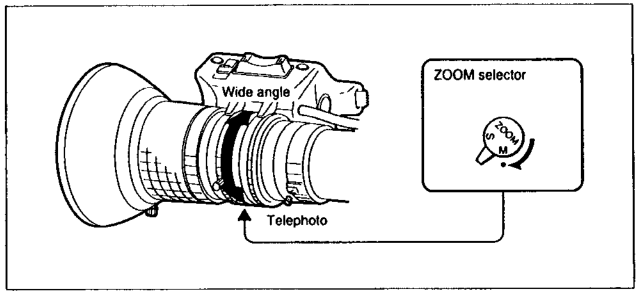
Set the ZOOM selector to S (servo). Press all the way down on the motorized zoom switch to zoom faster, and press lightly to zoom slowly.

Zooming in/out operation

Operation	Motorized zoom switch
To zoom in 	Press the T (Telephoto) side.
To zoom out 	Press the W (Wide) side.

Manual Zooming

Manual zooming enables more precise control over the zooming speed.



Manual zooming

Set the ZOOM selector to M, and rotate the zoom lever. By changing the speed of rotating the zoom lever, you can vary the zooming speed.

Going to wide angle (zoom in)	Rotate the zoom lever upward.
Going to telephoto (zoom out)	Rotate it downward.

Tips on zooming

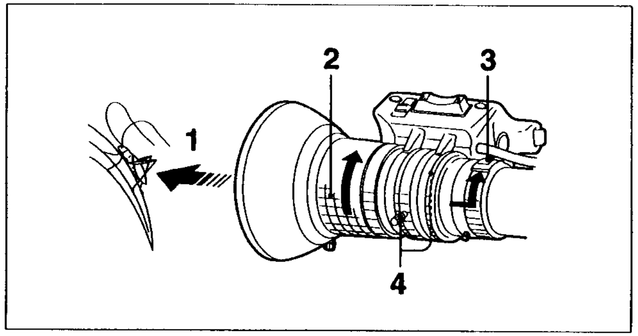
Focusing
If the object is in focus in the telephoto position, it will remain in focus when you zoom out to wide angle.

For smoother zooming
We recommend that you place the unit on a tripod. Camera shaking is especially conspicuous when zooming in.

Positioning the object in the center of the screen
To zoom in, compose the scene so that the object is at the center of the screen at the telephoto position, and set to the wide angle position. Then start to zoom in. Make sure that the object stays at the center of the screen while you are zooming.

Close-ups

Use the MACRO function when the distance from the lens to the object is less than 1 meter (less than 0.9 meter for VCL-916BYA). The minimum distance is 10 mm (wide angle position, f = 9 mm) in the macro zoom position.



Close-ups

1. Bring the lens closer to the subject until the desired image size is obtained.
2. Set the focus ring to the minimum distance position (0.9 for VCL-916BYA).
3. While sliding the MACRO button toward the camera head, rotate the MACRO ring in the direction of the arrow (upward) until it stops.
4. Set the ZOOM selector to M and rotate the manual zoom lever to focus.

After close-ups

Rotate the MACRO ring in the opposite direction of the arrow (downward) until it stops.

To decrease the size of the subject

After procedures 1 through 4, rotate the MACRO ring in the opposite direction of the arrow a little, and focus again with the zoom lever.

Tips on close-ups

The depth of field is narrow when doing the close-ups. Make sure to adjust the diopter and focus carefully.

Chapter 4
Shooting — Advanced Operations

This chapter explains in detail how to choose camera settings, according to each shooting condition.

Adjusting the Exposure **4-2**
  Adjusting the Iris 4-2
  Manual Iris Adjustment with the Zebra Pattern 4-4
Selecting the Gain **4-5**
  Increasing the Gain in Three Increments with the GAIN Selector 4-5
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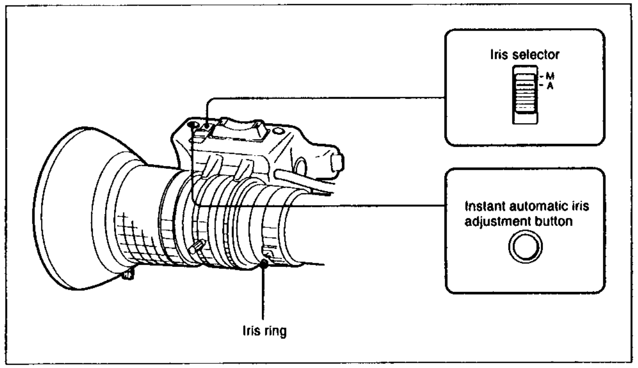
Adjusting the Exposure

There are three methods of exposure adjustment.

- Automatic iris adjustment
- Manual iris adjustment
- Temporary automatic iris adjustment

You can set the iris to adjust itself automatically according to the brightness of the object being shot. When you need a special effect, adjust it manually.
Use the instant automatic iris adjustment setting for temporary automatic adjustment of the iris during the manual adjustment.

Adjusting the Iris



Adjusting the iris

Adjusting the iris automatically

Set the iris selector to A (auto). The unit automatically adjusts the iris for the appropriate exposure according to the brightness of the subject to obtain an image with the appropriate brightness.

Adjusting the iris manually

Set the iris selector to M (manual), and adjust the iris manually by rotating the iris ring. Use the following table as a reference.

Manual iris adjustment

Condition	Adjustment of iris
The background is so bright that the subject becomes a silhouette. (Backlighting)	Open the iris slightly.
The subject is too bright as compared with the background. (Spot-lit in the dark.)	Close the iris slightly.
Special effect is desired.	Adjust according to the situation.

Activating the automatic iris adjustment instantly

You can adjust the iris automatically during manual iris adjustment, by holding down the instant automatic iris adjustment button. Release the button when the adjustment is made. The automatically adjusted iris is retained as is. When changing the iris, adjust it manually by rotating the iris ring.

Example of effective use
If the lighting level of the scene to be shot constantly changes due to strobe lights or other lights, adjust the iris manually first. Whenever the brightness seems to have changed, press the instant automatic iris adjustment button.

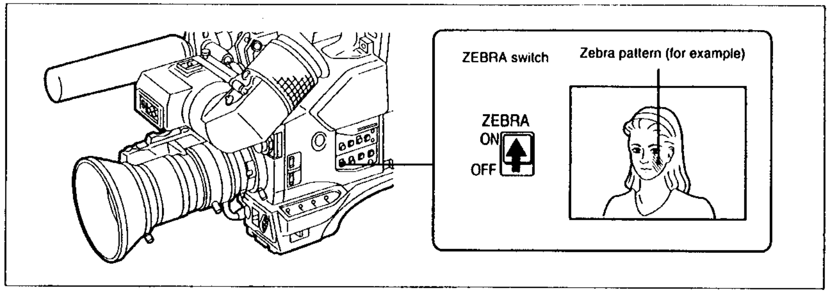
Changing the reference level of the automatic iris adjustment

In automatic iris adjustment, a reference level is determined by detecting the peak value and average value of the brightness of the subject. Based on the reference level, the iris is automatically adjusted. Therefore, in special lighting conditions such as backlighting, it is better to change the reference level in order to obtain the proper exposure.
There are two methods of changing the reference level.

- Set the A. IRIS MODE selector on the camera to the appropriate position. *(see page 4-7)*
- Change the setting of A. IRIS on the menu display in the viewfinder. *(see page 4-11)*

Manual Iris Adjustment with the Zebra Pattern*

The zebra pattern helps manual iris adjustment by indicating those areas of the picture where the video output level is about 70% to 80%1) IRE* (for NTSC) or 490 mV to 560 mV (for PAL). This pattern acts as a guide when you manually adjust the iris.



Displaying the zebra pattern

Displaying the zebra pattern

Set the ZEBRA switch to ON.

When shooting a person
Adjust the iris manually so that the zebra pattern appears on the bright portions of the face (forehead, cheeks, etc.).

When shooting a subject other than a person
Adjust the iris manually so that the zebra pattern appears on the part to be emphasized.

When you have no need for the zebra pattern
Set the ZEBRA switch to OFF.

---

1) **70% to 80%**
"%" is a unit to express the brightness of an image. The brightness of an image shot with a camera is expressed as ranging from 0 to 100%. Around 75% is the level where the colors of the subject are reproduced most faithfully.

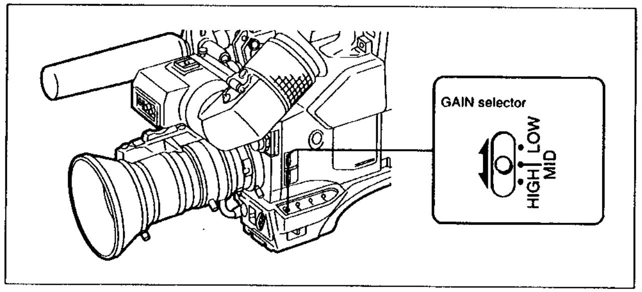
Selecting the Gain

If you cannot get a clear picture because of insufficient light, increase the gain to brighten the picture.
There are two methods to increase the gain.

- Increasing the gain in three increments, LOW, MID and HIGH, using the GAIN selector.
- Increasing the gain to 30 dB using the TURBO GAIN switch.

In an ordinary operation, the GAIN selector is used. The TURBO GAIN switch is used when the lighting suddenly becomes dark.

Increasing the Gain in Three Increments with the GAIN Selector



Setting the GAIN selector

Set the GAIN selector to LOW, MID or HIGH. The selected gain level is displayed on the viewfinder screen for a few seconds. The following table shows the factory-preset gain level settings.

Factory-preset gain level settings

Position of GAIN selector	Preset gain
LOW	0 dB (no gain increase)
MID	9 dB
HIGH	18 dB

Set the GAIN selector to LOW (0 dB) in ordinary use.

Note

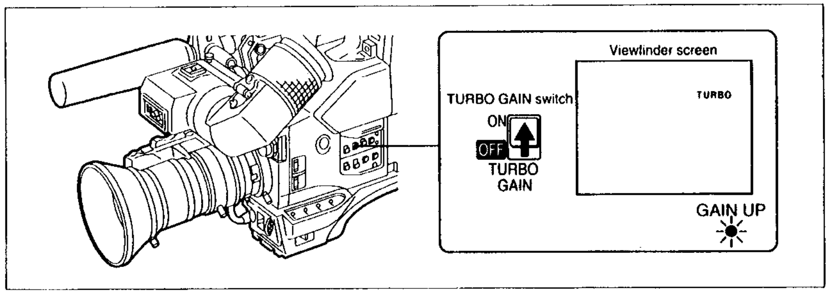
You cannot change the gain with the GAIN selector while the TURBO GAIN switch is set to ON.

Changing the gain level settings

The gain level for each position of the GAIN selector can be set within a range of –3 dB to 24 dB on the menu display.
For details, see "Changing the Settings in the Menu" on page 4-9.

Selecting the Gain

Increasing the Gain to 30 dB with the TURBO GAIN Switch



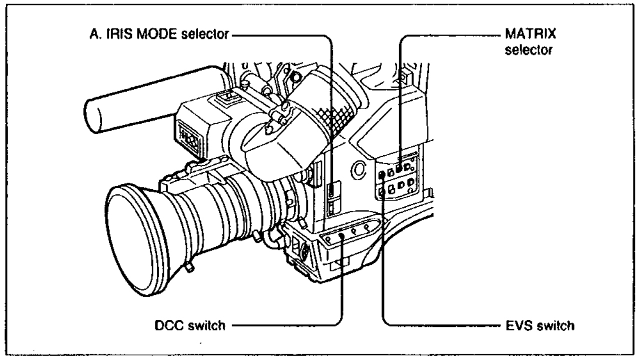
Increasing the gain to 30 dB with the TURBO GAIN switch

Set the TURBO GAIN switch to ON. The gain increases to 30 dB, and "TURBO" appears on the viewfinder screen and the GAIN UP indicator lights.
Set the switch back to OFF after shooting. "TURBO" disappears from the viewfinder screen, and the gain returns to the previous setting.

Shooting Various Subjects Under Different Lighting Conditions (Switch Settings)

This unit is equipped with various functions to make possible shooting corresponding to the lighting condition and subject. This section explains how to use the switches/selectors for those functions. Make use of it to cope with the conditions under which you wish to shoot.

Functions of Switches/Selectors



Switches/selectors

Switches/selectors and their purposes

Switch/selector	Purpose
A. IRIS MODE selector A.IRIS MODE BACK L STD SPOT L	Changes the reference level of the automatic iris adjustment according to the lighting conditions. **STD:** Standard position **BACK L:** When the subject is backlighted. The average of the brightness is adjusted so that the subject appears brightly. **SPOT L:** When the subject is spotlighted. The peak level is adjusted so that the subject appears properly.
EVS switch 	**ON:** Activates the EVS (Enhanced Vertical Definition system) function to increase the vertical resolution from 400 lines to 450 lines (NTSC) or from 450 lines to 530 lines (PAL). **OFF:** Standard position
MATRIX selector H SAT FL MATRIX	Activates the color matrix function to change the color tone of the image. **STD:** Standard position **H. SAT:** Enhances the chroma. **FL:** Reproduces natural colors under the fluorescent light.
DCC switch BARS CAM OFF ON DCC	**ON:** Standard position Activates the DCC (Dynamic Contrast Control) function to regain the color of a subject that has been whited out by bright light. **OFF:** Uses the whitening phenomenon in a highlighted scene to obtain a special effect.

Shooting Various Subjects Under Different Lighting Conditions
(Switch Settings)

Switch Settings Corresponding to the Shooting Conditions

Switch settings corresponding to the shooting conditions

Shooting conditions	Switch/selector position	Effects
The subject becomes a silhouette because the background is too bright.	Set the A. IRIS MODE selector to BACK L.	Prevents the subject from becoming a silhouette.
The subject is spotlighted.	Set the A. IRIS MODE selector to SPOT L.	Prevents the person's face or clothes from becoming white.
A higher vertical resolution is needed, when shooting the eye lines of a woman, etc.	Set the EVS switch to ON.	The vertical resolution increases.
Shooting a wedding or similar elaborate scene	Set the MATRIX selector to H. SAT.	The color is reproduced vividly.
Shooting under a fluorescent lamp (which has no color)	Set the MATRIX selector to FL.	Prevents the image from getting bluish and the image is reproduced in natural colors.
Using the whitening phenomenon as a special effect. (For example, shooting a person walking in a desert with backlighting.)	Set the DCC switch to OFF.	The person seems to be walking in a white background.

Shooting with Special Effects (Menu Operation)

The unit is equipped with convenient functions which enable the cameraman to express minute image impressions, such as by opening the iris a little excessively too much, sharpening detail and increasing contrast. Make the settings on the menu display.

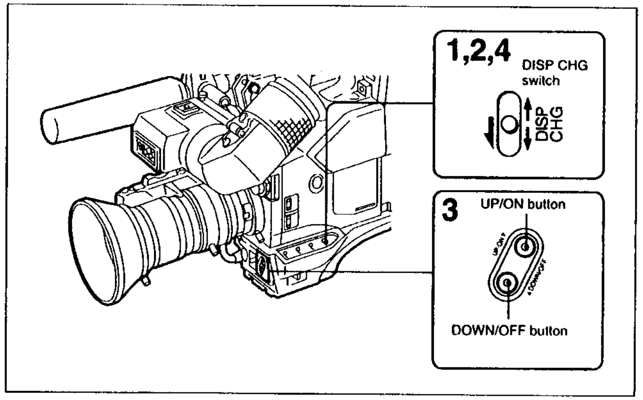
Items able to set on the menu display

Selectable items, their meanings and purposes

Menu Item	Meaning	Purpose
A. IRIS	Sets the reference level of the automatic iris adjustment.	To get a special effect by slightly over-exposing or under-exposing.
DETAIL	Sets the detail emphasis level.	To emphasize the details so that it can be dubbed by a VTR for consumer use without deterioration.
M.PED	Sets the master pedestal level to change the contrast of the image.	To make the contrast of the image higher or lower.
SHUTTER/CLS	Sets the shutter speed or scanning frequency of Clear Scan.	To shoot a fast-moving object or computer screen.
GAIN	Sets the gain level in each position of the GAIN selector.	To set the gain level for frequently used lighting conditions so that they can be obtained at a touch.

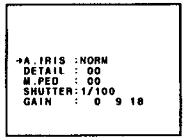
Changing the Settings in the Menu

Display the menu on the viewfinder screen and change the settings.
The procedures are the same for all the menu display items.



Changing the settings in the menu

1 Push the DISP CHG switch several times until the following display appears on the viewfinder screen.



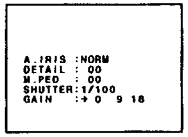
```
→A.IRIS :NORM
 DETAIL : 00
 M.PED  : 00
 SHUTTER:1/100
 GAIN   :  0  9 18
```

Menu display

2 Push the DISP CHG switch repeatedly until the cursor comes to the left of the item to be adjusted.

If you push the DISP CHG switch downward	the cursor moves down.
If you push it upward	the cursor moves up.

Example: When changing the gain level of the LOW position of the GAIN selector.

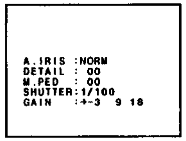


```
A.IRIS :NORM
DETAIL : 00
M.PED  : 00
SHUTTER:1/100
GAIN   :→0  9 18
```

Selecting the item

3 Change the setting by pressing the UP/ON and DOWN/OFF buttons.

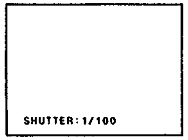
If you press the UP/ON button	the value increases.
If you press the DOWN/OFF button	the value decreases.
If you press them simultaneously	the setting returns to the standard value.



```
A.IRIS :NORM
DETAIL : 00
M.PED  : 00
SHUTTER:1/100
GAIN   :→-3  9 18
```

Changing the setting

4 Push the DISP CHG switch several times until the normal display appears on the viewfinder screen.



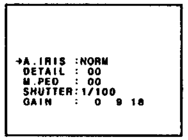
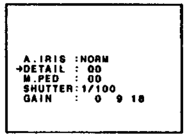
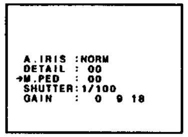
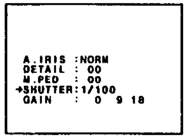
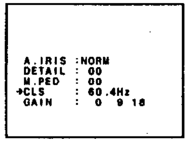
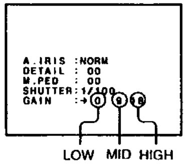
```
SHUTTER:1/100
```

Normal display

The set values are retained even if the power to the unit is shut off.

Menu Display Items and Setting Values

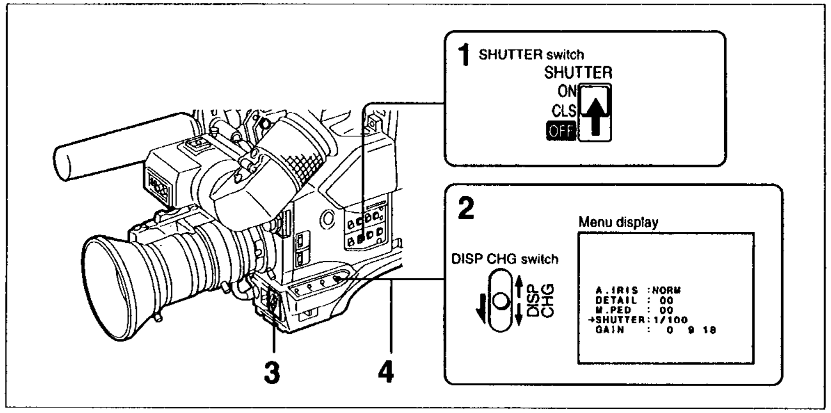
Menu display items, their meanings and setting ranges

Menu Item	Meaning	Setting range	
A. IRIS	Setting the reference level of automatic iris adjustment	–1.0, –0.5, NORM (standard value), 0.5, 1.0 • As the value gets smaller, the iris closes, and as it gets bigger, the iris opens.	 →A.IRIS :NORM DETAIL : 00 M.PED : 00 SHUTTER:1/100 GAIN : 0 9 18
DETAIL	Setting the detail emphasis level	–99 to 00 (standard value) to +99 • The smaller the value, the softer the detail is, and the larger it is, the sharper.	 A.IRIS :NORM →DETAIL : 00 M.PED : 00 SHUTTER:1/100 GAIN : 0 9 18
M.PED	Setting the master pedestal level	MIN, –30 to 00 (standard value) to +30, MAX • The smaller the value, the darker the dark portion of the image becomes and the higher the contrast becomes. The larger the value is, the brighter the dark portion of the image gets and the lower the contrast becomes.	 A.IRIS :NORM DETAIL : 00 →M.PED : 00 SHUTTER:1/100 GAIN : 0 9 18
SHUTTER	Setting the shutter speed (when the SHUTTER switch is set to ON)	1/100 for NTSC or 1/60 for PAL (standard value), 1/250, 1/500, 1/1000, 1/2000 second • The smaller the denominator of the value is, the slower the shutter speed is, and the larger, the faster. *For details, see page 4-12.*	 A.IRIS :NORM DETAIL : 00 M.PED : 00 →SHUTTER:1/100 GAIN : 0 9 18
CLS	Setting the scanning frequency of Clear Scan (when the SHUTTER switch is set to CLS)	60.4 to 200.3 Hz for NTSC 50.3 to 201.4 Hz for PAL • The value indicates the scanning frequency of the Clear Scan. Set it while watching the image on a personal computer screen on the monitor so that the noise is the least. *For details, see page 4-15.*	 A.IRIS :NORM DETAIL : 00 M.PED : 00 →CLS : 60.4Hz GAIN : 0 9 18
GAIN	Setting the gain level in each position of the GAIN selector	–3, 0, 3, 6, 9, 12, 18, 24 dB (standard values: 0, 9, 18) • The figures indicate each position of LOW, MID, and HIGH of the GAIN selector from left to right. Push the DISP CHG switch to move the cursor to the left of the figure to be changed, and select by pushing the UP/ON and DOWN/OFF buttons. • You can set the three values only in the range of LOW < MID < HIGH.	 A.IRIS :NORM DETAIL : 00 M.PED : 00 SHUTTER:1/100 GAIN :→0 9 18

Using a High Shutter Speed*

If you increase the shutter speed, a fast-moving object can be shot with reduced blurriness. The flickering which occurs when shooting under the fluorescent lamp can also be reduced by changing the shutter speed. The shutter speed is factory-set to 1/100 for NTSC and 1/60 for PAL. You can select a shutter speed from the five settings, which are in the following order:
NTSC: 1/100, 1/250, 1/500, 1/1000, 1/2000
PAL: 1/60, 1/250, 1/500, 1/1000, 1/2000

Setting the shutter speed



Setting the shutter speed

1 Set the SHUTTER switch to ON.
The shutter speed is now selectable.

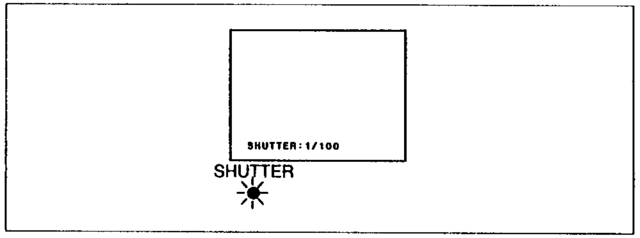
2 Push the DISP CHG switch several times until the menu display shown above appears on the viewfinder screen. Place the cursor to the left of SHUTTER.

3 Select the shutter speed by pressing the UP/ON or DOWN/OFF button. Settings change in the following sequence each time the UP/ON button is pressed.
1/100 for NTSC, 1/60 for PAL → 1/250 → 1/500 → 1/1000 → 1/2000
(factory setting)

If you press the DOWN/OFF button, the setting changes in the reverse sequence. If the UP/ON and DOWN/OFF buttons are pressed simultaneously, the setting returns to 1/100 for NTSC, or 1/60 for PAL.

4 Push the DISP CHG switch several times until the normal viewfinder screen appears.

The selected speed appears on the viewfinder screen and the SHUTTER indicator lights.



Shutter speed display

The selected shutter speed is retained in the camera memory even if the power of the camera is turned off, unless it is readjusted.

After shooting

Set the SHUTTER switch to OFF. The SHUTTER display in the viewfinder screen disappears.
If you set the SHUTTER switch to ON again, the shutter speed changes to the speed selected in the menu display.

Notes on using the high shutter speed

- If the EVS switch on the camera is set to ON, you cannot change the shutter speed.
- The faster the shutter speed is, the darker the image is. Check the brightness on the viewfinder, and increase the lighting or adjust the iris if necessary.
- When you shoot a bright object with the fast shutter speed, the vertical smear might be obvious.

Appropriate shutter speed to capture the movement of a subject

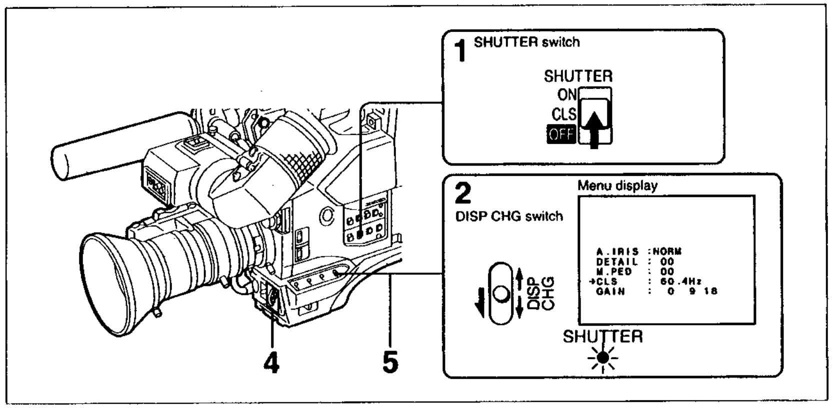
Appropriate shutter speed for each subject

Subject	Shutter speed
• Skiing	1/2000
• Moment of diving into water • Motor sports (straight) • Flow of water fall • Flapping wings of a bird • Facial expressions of athletes in competition	1/1000
• Skating, jumping, surfing • Movement of a butterfly	1/500
• Human movement • Judo, karate, boxing • Athletic meeting, marathon • Motor sports (corners) • Gliding birds • Roller coaster on a overcast day • Scenery shot from a moving car or train • Stroboscopic shooting of a stationary animal	1/250
• Flowers swinging in the wind • Indoor sports • Mountains covered with snow or sunny seashore in the mid summer (replaces ND2 filter) • Shooting under a fluorescent lamp in an area where the electricity frequency is 50 Hz (for NTSC) or 60 Hz (for PAL).	1/100 (for NTSC) or 1/60 (for PAL)

Shooting a CRT such as a Computer Screen (Clear Scan Function)

When you shoot the screen of a computer or projector, horizontal noise bands appear on the image. The noise occurs because the scanning frequency of the monitor screen differs from that of the camera. The Clear Scan function decreases the horizontal noise bands.

Decreasing the horizontal noise bands



Using the Clear Scan function

1 Set the SHUTTER switch to CLS.

2 Push the DISP CHG switch several times until the display shown above appears on the viewfinder screen. Place the cursor to the left of CLS.

3 Display the screen of a computer on the monitor.

4 While looking at the monitor, press the UP/ON or DOWN/OFF button until the frequency with the least noise is selected.
The settings change in the following range and sequence each time you press the UP/ON button.
NTSC: 60.4 Hz (factory setting) to 200.3 Hz
PAL: 50.3 Hz (factory setting) to 201.4 Hz

If you press the DOWN/OFF button, the setting changes in the reverse sequence.
If you press the UP/ON and DOWN/OFF buttons simultaneously, the setting returns to 60.4 Hz for NTSC or 50.3 Hz for PAL.

Shooting with Special Effects (Menu Operation)

5 Push the DISP CHG switch several times until the normal viewfinder screen appears.

The frequency of the Clear Scan is retained in the camera memory even if the power is turned off, unless it is readjusted.

After shooting

Set the SHUTTER switch to OFF. The Clear Scan function is now canceled. If you set the SHUTTER switch to CLS again, the Clear Scan function operates at the frequency selected in the menu display.

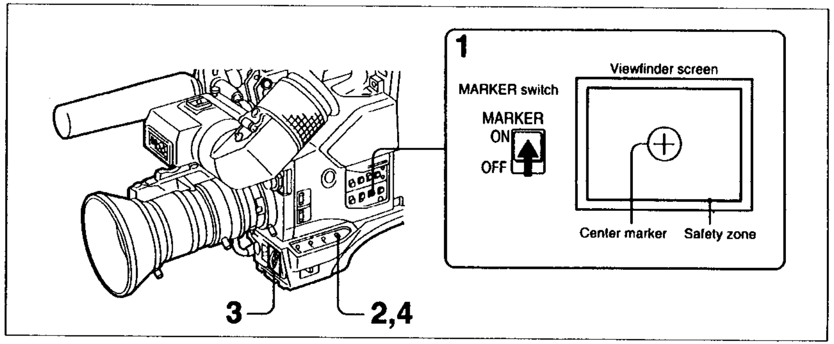
Note

As the vertical scanning frequency differs according to the type of computer, the horizontal noise bands may not be completely eliminated. Further, please note that the frequency also changes according to the software used.

Displaying the Marker in the Viewfinder

The safety zone (effective screen frame) and center marker* can be displayed on the viewfinder screen.
You can select the marker display as follows:

- Display both the safety zone and center marker.
- Display the safety zone only.
- The size of the safety zone can be set to either 90% or 80% of the screen area.



Displaying the marker in the viewfinder

Displaying the marker in the viewfinder

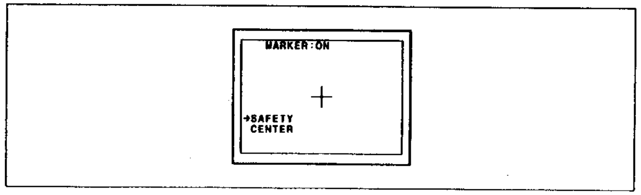
Set the MARKER switch to ON. The safety zone and center marker are displayed. If you set the MARKER switch to OFF, the safety zone and center marker disappear.

Changing the safety zone size

Generally, the image we see on the video monitor is not the whole image shot with the camera. About 75 to 90% of the image shot is displayed on the monitor so that a gap does not appear in the surrounding area even if the screen becomes smaller due to a change in the voltage. This is called over scan, and the over scan amount varies according to the monitor. Set the safety zone size according to the monitor to be used.

1 Set the MARKER switch to ON.

2 Push the DISP CHG switch several times until the cursor comes to the left of SAFETY on the viewfinder screen. (If you advance too far, push the DISP CHG switch upward to return the position of the arrow.)



Marker setting display

3 Press the UP/ON or DOWN/OFF button.

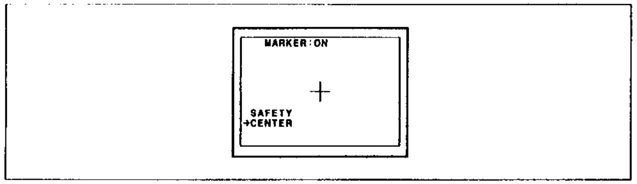
If you press the UP/ON button	the safety zone size changes to 90%.
If you press the DOWN/OFF button	it changes to 80%.

4 Push the DISP CHG switch several times until the normal viewfinder display appears.

Canceling the center marker

1 Set the MARKER switch to ON.

2 Push the DISP CHG switch several times until the cursor comes to the left of CENTER on the viewfinder screen.



Marker setting display

3 Press the UP/ON or DOWN/OFF button.

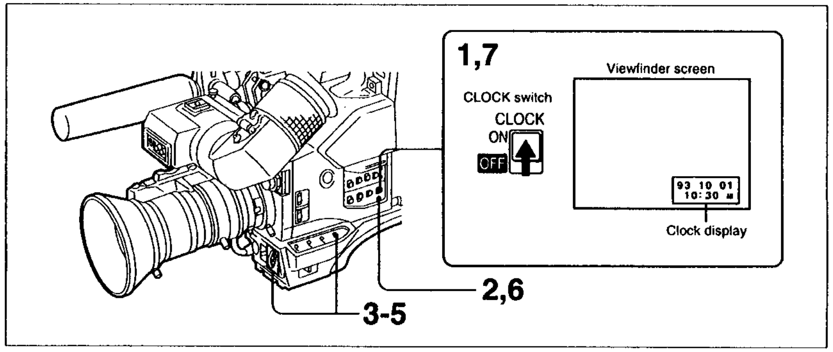
If you press the UP/ON button	the center marker appears.
If you press the DOWN/OFF button	it disappears.

4 Push the DISP CHG switch several times until the normal viewfinder display appears.

Recording the Date and Time of Shooting

Setting the clock built in the unit, you can record the date and time of shooting.

Setting the Clock



Setting the clock

1 Set the CLOCK switch to ON.
The clock display appears on the viewfinder screen.

2 Press the SET button.
The year display flashes.

3 Set the date and the time using the DISP CHG, UP/ON and DOWN/OFF buttons.

❶ Push the DISP CHG switch downward or upward so that the item to be set flashes.
❷ Change the figure by pressing the UP/ON button.
(If you advance too far, reset it by pressing the UP/ON and DOWN/OFF buttons simultaneously, and set it again by pressing the UP/ON button.)
❸ Repeat ❶ and ❷ and, set in order of the year, month, day, hour and minute.

4 Select the 12-hour system or 24-hour system.

❶ Push the DISP CHG switch. AM/PM (or ■) flashes.
❷ Each time you press the UP/ON button, the 12-hour system (AM/PM) and 24-hour system (with ■ indicator) is selected alternately.

5 Select the order for displaying the year and date. The display of the year and date changes as follows at each push on the DISP CHG switch.
"YY" means year, "MM" means month, and "DD" means day.

- Year, month, day (example: 93 05 11)
- Month, day, year (example: 05 11 93)
- Day, month, year (example: 11 05 93)

6 Press the SET button at a timecast.
The clock starts moving from 00 seconds.

7 Set the CLOCK switch to OFF to cancel the clock display.

Recording the Date and Time of Shooting

The date and time of shooting can be recorded over the image.

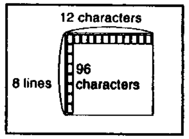
1 Set the CLOCK switch to ON before shooting or during shooting where you want to record the date and time.
The clock display appears on the viewfinder screen and is output from the camera video output.

2 Set the CLOCK switch to OFF to stop recording the date and time.

If the clock display does not appear when the CLOCK switch is set to ON
The built-in lithium battery may be exhaused. Consult your Sony dealer.

Recording a Title

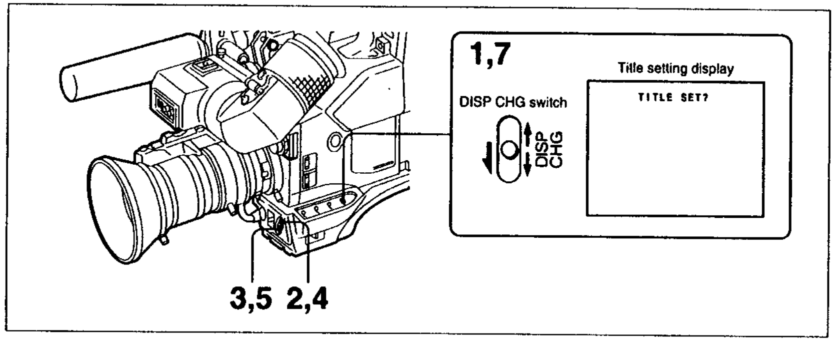
Using the character generator built in the unit, you can create a title with letters and numbers in the viewfinder and store it in the memory. You can record them over the image being shot.
A title of up to 8 lines, 96 characters can be memorized.



Title display area

Making and Memorizing a Title

Operating procedures are as follows:
❶ Make a title and memorize it.
❷ Recall the title before shooting.
❸ Start shooting.

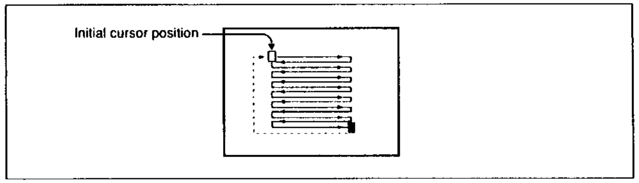


Making and memorizing a title

1 Push the DISP CHG switch several times until the above display appears on the viewfinder screen.
(If you advance too far, press the DISP CHG switch upward to return.)

If a title already exists, it is displayed. (If you want to erase the existing title, press the UP/ON and DOWN/OFF buttons simultaneously.)

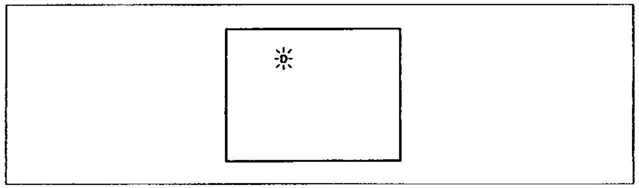
2 Press the UP/ON button.
A cursor appears on the display, and you can set the title characters.



Displaying a cursor

3 Press the DOWN/OFF button to move the cursor to the position where you want a title. (To reverse the cursor, while holding down the DOWN/OFF button, press the UP/ON button.)
12 characters can be input on a line, and there are 8 lines, totaling 96 characters.

4 Press the UP/ON button to display the desired character.
(To display the characters in the reverse order, press the DOWN/OFF button while pressing the UP/ON button.)

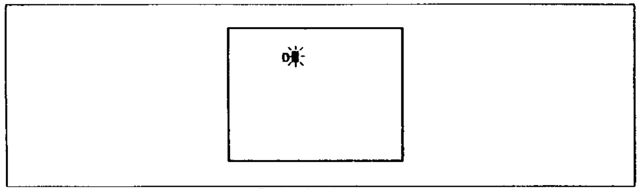


Selecting a character

The display changes in the following order each time you press the UP/ON button.

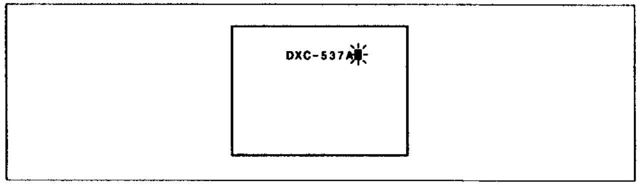
↳ ABCDEFGHIJKLMNOPQRSTUVWXYZ?;x0123456789:<>-.,☐
(blank)

5 Set the selected character by pressing the DOWN/OFF button. The cursor moves to the next character position.



Setting the character

6 Repeat procedures 4 and 5 to set all the characters.



Title completed

The set characters remain in the memory even when the title display or the power is turned off.

7 After making the title, push the DISP CHG switch so that the normal viewfinder screen appears.

To replace a character

Make the character you want to replace flash by pressing the DOWN/OFF button in step 3 above, and replace with a new character by pressing the UP/ON button.

Recording a Title

1 Push the DISP CHG switch several times until the title appears on the viewfinder screen.

2 Press the UP/ON button once.

3 Start shooting.

4 To stop recording the title, pause the VTR by pressing the VTR button. Then push the DISP CHG switch to cancel the title display.

Note on the CCU-M5/M5P

When "TITLE SET; ON" is set using the function switch of the CCU-M5/M5P, set value is not displayed on the viewfinder screen even if a switch such as GAIN switch is turned on or off. And except when the normal viewfinder screen appears, the title display is not displayed even if "TITLE SET; ON" is set.

Chapter 5
System Upgrading

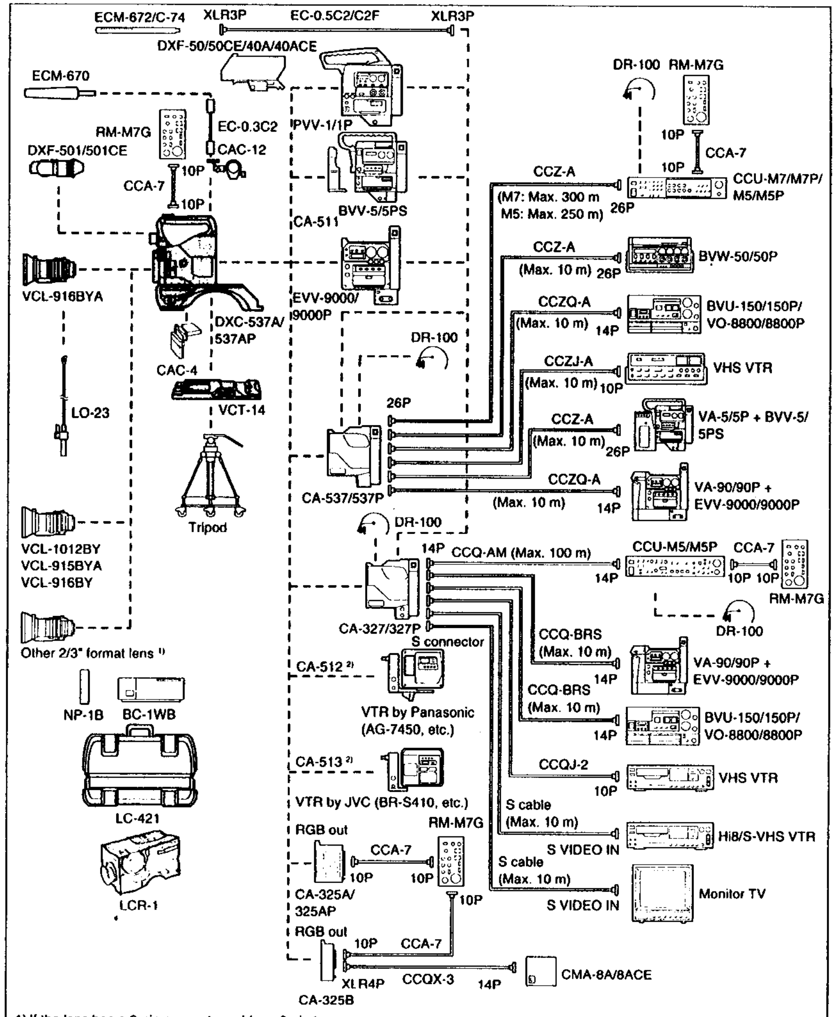
This chapter introduces the optional components and accessories for system upgrading, and sample systems for different purposes.

Chart of Optional Components and Accessories **5-2**
Table of Optional Components and Accessories **5-3**
Summary of Optional Components and Accessories **5-4**
- Lenses 5-4
- Viewfinders 5-4
- Microphones and Headsets 5-5
- Camera Adaptors 5-6
- VTRs 5-7
- Power Sources 5-8
- Camera Control Units 5-9
- Camera Cables 5-10

Sample Video System Configurations **5-11**
- Multi Camera System 5-11
- Computer Graphics System 5-12
- Laser Video Disc Recording System 5-12
- Microscope Recording System 5-13
- Still Image Transmitting System 5-13

Chart of Optional Components and Accessories

The chart below shows the optional components and accessories for the DXC-537A/537AP color video camera. They are introduced on pages 5-4 to 5-10.



ECM-672/C-74
XLR3P
EC-0.5C2/C2F
XLR3P
DXF-50/50CE/40A/40ACE
ECM-670
RM-M7G
EC-0.3C2
PVV-1/1P
DXF-501/501CE
CAC-12
10P
CCA-7
10P
CA-511
BVV-5/5PS
VCL-916BYA
EVV-9000/9000P
DXC-537A/537AP
DR-100
CAC-4
VCT-14
26P
LO-23
CA-537/537P
Tripod
DR-100
VCL-1012BY
VCL-915BYA
VCL-916BY
14P
CCQ-AM (Max. 100 m)
CA-327/327P
S connector
Other 2/3" format lens 1)
CA-512 2)
NP-1B
BC-1WB
VTR by Panasonic (AG-7450, etc.)
CA-513 2)
LC-421
VTR by JVC (BR-S410, etc.)
RGB out
RM-M7G
CCA-7
10P
10P
LCR-1
CA-325A/325AP
10P
RGB out
10P
CCA-7
XLR4P
CCQX-3
14P
CA-325B
CMA-8A/8ACE
DR-100
RM-M7G
10P
CCA-7
10P
CCZ-A
(M7: Max. 300 m M5: Max. 250 m)
26P
CCU-M7/M7P/M5/M5P
CCZ-A
(Max. 10 m)
26P
BVW-50/50P
CCZQ-A
(Max. 10 m)
14P
BVU-150/150P/VO-8800/8800P
CCZJ-A
(Max. 10 m)
10P
VHS VTR
CCZ-A
(Max. 10 m)
26P
VA-5/5P + BVV-5/5PS
CCZQ-A
(Max. 10 m)
14P
VA-90/90P + EVV-9000/9000P
CCU-M5/M5P
CCA-7
14P
10P
10P
RM-M7G
DR-100
CCQ-BRS
(Max. 10 m)
14P
VA-90/90P + EVV-9000/9000P
CCQ-BRS
(Max. 10 m)
14P
BVU-150/150P/VO-8800/8800P
CCQJ-2
10P
VHS VTR
S cable
(Max. 10 m)
S VIDEO IN
Hi8/S-VHS VTR
S cable
(Max. 10 m)
S VIDEO IN
Monitor TV

1) If the lens has a 6-pin connector cable, a 6-pin to 12-pin conversion cable is required.
2) Equipped with an XLR3P microphone input

Chart of optional components and accessories

Table of Optional Components and Accessories

This table shows the components and accessories that fit the camera adaptors and dockable VTRs.

Optional components and accessories

Camera head DXC-537A/537AP	Components and accessories	2/3" lens			Viewfinder			Microphone			Microphone holder			Headset	Earphone	Power source					
		VCL-915BYA	VCL-916BY	VCL-1012BY	DXF-501/501CE	DXF-50/50CE	DXF-40A/40ACE	ECM-672	C-74	ECM-670	CAC-1	CAC-11/11A	CAC-12	DR-100	—	NP-1B/1A	BP-90A	DC-210	DC-520	CMA-8A/8ACE	AC-500/500CE
Camera adaptor	CA-537/537P	●	●	ⓐ	●	●	●	●	●	●	●	●	●	●	ⓒ	●	×	●	●	●	ⓓ
	CA-327/327P 1)	●	●	ⓐ	●	●	●	●	●	×	●	●	●	●	ⓒ	●	×	●	●	●	ⓓ
	CA-325A/325AP	●	●	ⓐ	●	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
	CA-325B	●	●	ⓐ	●	×	×	×	×	×	×	×	×	×	×	×	×	●	×	●	●
Dockable VTR	PVV-1/1P	●	●	ⓐ	●	ⓑ	ⓑ	●	●	●	×	×	●	×	ⓒ	●	●	●	●	●	ⓓ
	BVV-5/5PS (+ CA-511)	●	●	ⓐ	●	×	×	●	●	●	×	×	●	×	ⓒ	●	●	●	●	●	ⓓ
	EVV-9000/9000P	●	●	ⓐ	●	×	×	●	●	×	×	×	●	×	ⓒ	●	●	●	●	●	ⓓ
	AG-7450/7450A 2) (+ CA-512)	●	●	ⓐ	●	×	×	●	●	×	×	×	●	×	ⓒ	×	×	×	×	●	ⓓ
	BR-S410/S411 3) (+ CA-513)	●	●	ⓐ	●	×	×	●	●	×	×	×	●	×	ⓒ	×	×	×	×	●	ⓓ
	BR-S420C 3) (+ CA-513)	●	●	ⓐ	●	×	×	●	●	×	×	×	●	×	ⓒ	×	×	×	×	●	ⓓ

Camera head DXC-537A/537AP	Components and accessories	Camera control unit			Portable VTR								
		CCU-M7/M7P	CCU-M5/M5P	RM-M7G	BVW-50/50P	BVV-5/5PS (+ VA-5/5P)	BVU-150/150P	VO-6800/6800PS	VO-8800/8800P	EVV-9000/9000P (+ VA-90/90P)	EDW-75 (+ VA-N75)	AG-6400 2)	AG-7400 2)
Camera adaptor	CA-537/537P	ⓔ	ⓔ	ⓕ	●	●	●	●	●	●	●	●	●
	CA-327/327P 1)	ⓔ	ⓔ	ⓕ	ⓖ	ⓖ	●	●	●	●	●	●	●
	CA-325A/325AP	×	×	ⓕ	×	×	×	×	×	×	×	×	×
	CA-325B	×	×	ⓕ	×	×	×	×	×	×	×	×	×
Dockable VTR	PVV-1/1P	×	×	ⓕ	×	×	×	×	×	×	×	×	×
	BVV-5/5PS (+ CA-511)	×	×	ⓕ	×	×	×	×	×	×	×	×	×
	EVV-9000/9000P	×	×	ⓕ	×	×	×	×	×	×	×	×	×
	AG-7450/7450A 2) (+ CA-512)	×	×	ⓕ	×	×	×	×	×	×	×	×	×
	BR-S410/S411 3) (+ CA-513)	×	×	ⓕ	×	×	×	×	×	×	×	×	×
	BR-S420C 3) (+ CA-513)	×	×	ⓕ	×	×	×	×	×	×	×	×	×

●: Applicable
×: Not applicable
ⓐ to ⓖ: See notes.

ⓐ: A conversion cable (6P to 12P) is required.
ⓑ: Attachable to the camera handle only.
ⓒ: Minijack
ⓓ: CCQX cable is required.
ⓔ: Some functions cannot be controlled.
ⓕ: Connectable to the camera head.
ⓖ: Component signals cannot be recorded. (VBS signal only)

Note

When connecting a portable VTR, a cable length of more than 10m (33 ft.) cannot be guaranteed.

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1) CA-327: Serial No. 10271 and higher
CA-327P: Serial No. 40101 and higher
2) Panasonic VTRs
3) JVC VTRs

Summary of Optional Components and Accessories

This section introduces you to a summary of the following components and accessories.

- Lenses
- Viewfinders
- Microphones and headsets
- Camera adaptors
- VTRs
- Power sources
- Camera control units
- Camera cables

Lenses

Lenses

Item \ Lens	Canon	Fujinon
	VCL-915BYA	**VCL-916BY**
Focal length	9.5 – 143mm	9.5 – 152 mm
Zoom ratio	15 ×	16 ×
Iris control	F1.8 to F16 and C (Close)	
Range of object field	at a distance of 0.95 m W(Wide angle): 601 × 801mm (23 3/4 × 31 5/8 inches) T(Telephoto): 41 × 54mm (1 5/8 × 2 1/4 inches)	at a distance of 0.95 m W(Wide angle): 617 × 823 mm (24 3/8 × 32 1/2 inches) T(Telephoto): 38 × 51 mm (2 1/8 × 1 1/2 inches)
Minimum object distance	0.95m	0.95m
Filter thread	ø 82mm P = 0.75	ø 77mm P = 0.75
Connector	12-pin	12-pin
Mount	2/3-inch Bayonet mount	
Remote lens control	LO-26	LO-23

Viewfinders

Viewfinders

Item \ Viewfinder	DXF-50/50CE	DXF-40A/40ACE
Picture tube	5" monochrome, 70-degree	4" monochrome, 50-degree
Resolution	More than 600 TV lines (center) More than 500 TV lines (corners)	400 TV lines

Longsight kit and left-eye adaptor for DXF-501/501CE

By attaching the longsight kit to the DXF-501/501CE viewfinder, the normal diopter adjustment range (–1D to –3D) can be changed to –1D to +1D.
The left-eye adaptor allows you to watch through the viewfinder with your left eye.
For more information, consult your Sony dealer.

Microphones and Headsets

Microphones and headsets

Microphone	Gun microphone		Headset
Item	ECM-672	C-74	DR-100A
Directivity	Super cardioide	Super uni-directional	Microphone section: Unidirectional
Power supply	Batteries (size AA (R6) × 1) Continuous battery operation time: about 3000 hours, 48 V DC	Mercury battery (7MR9 × 1) Continuous battery operation time: about 50 hours, 48 V DC	—
Microphone diameter (mm)	ø 24 mm	ø 25 mm	—
Remarks	Microphone cable EC-0.5C2 (Cannon male - Cannon male)/EC-0.5C2F (Cannon male - Cannon female)		Plug connector: stereo miniplug

Summary of Optional Components and Accessories

Camera Adaptors

Camera adaptors

Item	Camera adaptor	CA-537/537P	CA-327/327P	CA-325A/ 325AP	CA-325B
Inputs/outputs	VTR/CCU/CMA	Z-type, 26-pin	Q-type, 14-pin	—	—
	DC IN	XLR-type, male, 4-pin		—	XLR-type, male, 4-pin
	AC IN	—	—	3-pin, male	—
	MIC IN	XLR-type, female, 3-pin (compatible with external power supply system	XLR-type, female, 3-pin, balanced	—	—
	GENLOCK IN	BNC		BNC	
	EAR	minijack		—	—
	INTERCOM	mini intercom jack		—	—
	VIDEO OUT	—	—	BNC	
	S VIDEO OUT	—	4-pin mini DIN	4-pin mini DIN	
	RGB	—	—	BNC (G sync ON/OFF possible)	
	SYNC OUT	—	—	BNC	
	AUDIO OUT	—	phono jack	phono jack	
	REMOTE	—	—	10-pin, female	
Power requirements		12 V DC		CA-325A: 100/120 V AC, 50/60 Hz CA-325AP: 220/240 V AC, 50/60 Hz	12 V DC
Features		This camera adaptor is required when recording with a Betacam portable VTR which requires component outputs (BVW-50/50P/35/35P or BVV-5/5P + VA-5/5P).	Component outputs are not supplied, however, it is equipped with an S Video connector. It is convenient when using a S-VHS VTR as a sub VTR.	As there is a difference of 0.8 kg in their weight, the CA-325B is more suitable in an application which requires light weight, such as a microscope system.	

VTRs

VTRs

VTR Item		PVV-1/1P	BVV-5/5PS	BVW-50/50P	BVU-150/150P	VO-8800/8800P	EVV-9000/9000P
Recording format		Betacam SP			SP-U-matic	SP-U-matic	Hi8
Dockable system availability		○	○ (+ CA-511 camera adaptor)	—	—	—	○
Portable system availability		—	○ (+ VA-5/5P camera adaptor)	○	○	○	○ (+ VA-90/90P camera adaptor)
Inputs/outputs	CAMERA IN	—	—	Z-type, 26-pin	Q-type, 14-pin	Q-type, 14-pin	—
	VIDEO IN	—	BNC	BNC	BNC	BNC	—
	SC IN	—	—	BNC	BNC	—	—
	AUDIO IN (MIC IN)	XLR-type, 3-pin, female × 2	XLR 3-pin, male × 4	XLR 3-pin, male × 4	XLR 3-pin, male × 2	XLR 3-pin, female × 2	XLR 3-pin, male × 2
	TIME CODE IN	BNC		BNC	BNC	BNC (BKU-706)	—
	GENLOCK* VIDEO	BNC		—	—	—	—
	REMOTE IN	—		—	—	Special minijack	—
	DC IN	XLR 4-pin, male		XLR 4-pin, male	XLR 4-pin, male	XLR 4-pin, male	XLR 4-pin, male
	VIDEO OUT	BNC		BNC × 2	BNC	BNC	BNC × 1 Phono × 1
	AUDIO OUT	—		XLR 3-pin, female × 4	XLR 3-pin, female × 2	XLR 3-pin, male × 2	Phono
	TIME CODE OUT	BNC		BNC	BNC	BNC (BKU-706)	—
	HEAD-PHONE OUT	—		Stereo phone jack	Stereo minijack	Stereo phone jack	—
	EAR-PHONE OUT	Minijack		Stereo minijack	—	—	Minijack
	DC OUT	—		—	—	—	—
	Others	—	PLAYBACK ADAPTOR: 20-pin multiconnector	DUB/COMPONENT OUT: 12-pin multiconnector RFU DC OUT: special minijack	RF OUT: F-type	RF OUT: F-type	RFU DC OUT: special minijack

Power Sources

Battery packs

Battery packs

Battery Item	NP-1B	NP-1A	BP-90A
Capacity	About 2.3 Ah[1]	About 1.7 Ah	About 5.0 Ah
Weight	About 690 g	About 690 g	About 1.7 kg
Battery charger (Charging time)	BC-1WB (About 95 minutes)	BC-1WA (About 70 minutes)	BC-410/410CE (About 160 minutes)

Battery chargers

Battery chargers

Battery charger Item	BC-1WB	BC-1WA	BC-410/410CE
Usable batteries	NP-1B, NP-1A	NP-1A	NP-1B, NP-1A, BP-90A
Features	• Up to four batteries can be installed simultaneously and charged in sequence. • Batteries with different capacities remaining can be charged safely by being installed in any slot.		• Up to four NP-1B/1A and four BP-90A can be installed and charged simultaneously. • Discharging function • Trickle charging to prevent automatic discharging • Charging indicator • Applicable on 100 – 240 V AC.

AC adaptors

AC adaptors

AC adaptor	CMA-8A/8ACE	AC-500/500CE
Maximum current supplied	5A	7A

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1) **Ah**
A unit to indicate the capacity of a battery. 2.3 Ah means that the battery lasts for 1 hour when it bears a load of 2.3A.

Summary of Optional Components and Accessories

Camera Control Units

Camera control units

Item \ Camera control unit		CCU-M5/M5P	CCU-M7/M7P	RM-M7G
Camera		Q-type 14 pin, Z-type 26-pin	Z-type 26-pin	CCU/CAMERA: 10-pin
Inputs/outputs	DC input	—	—	—
	Viewfinder	—	—	—
	Return video in/out	BNC × 2		—
	Genlock in/out	BNC × 2		—
	Video out	VBS: BNC × 2 Y/C: 4-pin mini DIN RGB/component: BNC × 3		—
	Monitor out	BNC × 1	—	BNC × 1
	Tally/incom	4-pin DIN, screw terminal × 4		—
	Sync out	BNC		—
	Remote	10-pin		—
	Mic. out	—	XLR-type, 3-pin, male	—
	Auxiliary	—	—	10-pin
Power requirement		85–138 V AC, 50/60 Hz (CCU-M7) 185–275 V AC, 50/60 Hz (CCU-M7P)		9- 17 V DC (Power is supplied from the connected equipment.)
Cable length (max.)		250 m or 825 feet	300 m or 990 feet	100 m or 330 feet No cable compensation of the video signal.
Gain		0 dB (LOW)/9 dB (MID)/18 dB (HIGH)		
Output signal		Camera/Color bar	Camera/Color bar/Test	
Character display		ON/OFF		—
Shutter speed		OFF (1/60), 1/100, 1/200, 1/500, 1/1000, 1/2000, 1/5000, 1/10000		OFF (1/60), 1/100, 1/200, 1/500, 1/1000, 1/2000
Iris		Manual/Auto		
White balance		Manual/Auto/Preset		
R/B gain		○		
Black balance		Manual/Auto		
Master pedestal		○		
R/B pedestal		○		
Master gamma		—	○	—
R/B gamma		—	○	—
Knee point		Manual/Auto/Preset		—
Detail		○	○	○
SC phase		○	○	—
H phase		○	○	—
Scene file function		—	○ (8 positions)	—
Intercom/Tally		Intercom/Tally		Tally indicator
VTR start/stop switch		—	—	○
Microphone output		—	○	—
Others		• Clock ON/OFF • Auto Iris Mode select • ATW ON/OFF • EVS ON/OFF • Color Matrix select • Title set ON/OFF • Menu operation	• A maximum of 300 m (990 feet) cable length is guaranteed by the built-in cable compensator. • Fine adjustment of the luminance and chrominance of a composite signal is possible.	• Easily connected to the DXC-537A/AP or CCU-M7/M7P using the CCA-7-5/25/50/100 camera control cable. The maximum cable length is 100 m (330 feet) with possible signal loss. • The color bar signals are output when it is connected to the DXC-537A/537AP and the output switch is set to TEST.

Note on the RM-M7G
When you use the CCU-M7/M7P/M5/M5P camera control unit to control the DXC-537A/537AP, you cannot connect the RM-M7G remote control unit directly to the camera head. Connect the remote control unit to the camera control unit.
However, you can connect the RM-M7G to the camera head if the camera control unit is not used.

Camera Cables

Camera cables

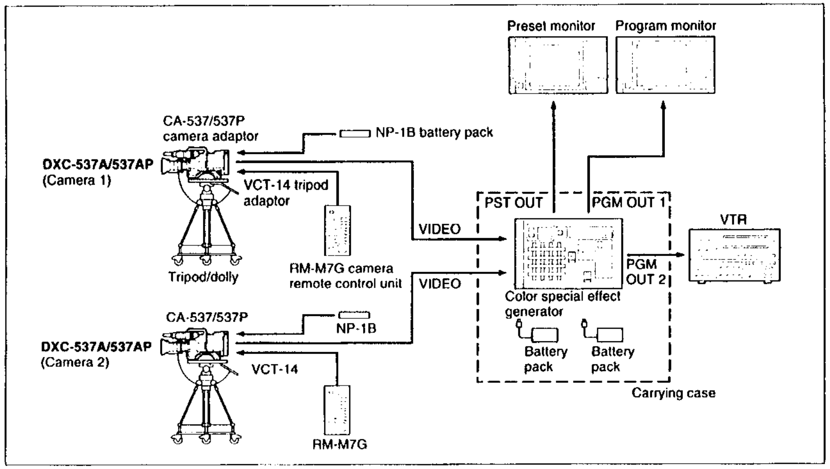
Model No.	Pin			Color	Functions/Features
CCZ-A (CCZ-A2/5/10/25/50/100)	26-pin	⊐—▷	26-pin	Gray	Used when connecting the CA-537/537P (26-pin) to the BVW-50/50P, BVV-5/5PS + VA-5/5P, CCU-M7/M7P or CCU-M5/M5P (26-pin).
CCZQ-A2AM	26-pin	⊐—▷	14-pin	Gray	Used with CCZ-A and CCZZ-1E/1B when connecting the CA-537/537P (26-pin) to the CCU-M5/M5P (14-pin).
CCZQ-A (CCZQ-A2/5/10)	26-pin	⊐—▷	14-pin	Blue	Used when connecting the CA-537/537P (26-pin) to the VO-8800/8800P/BVU-150/150P, EVV-9000/9000P + VA-90/90P, S-VHS VTR (AG-7400, etc.) or CMA-8A/8ACE (14-pin).
CCZJ-A (CCZJ-2/5)	26-pin	⊐—▷	J-type 10-pin	Dark gray	Used when connecting the CA-537/537P (26-pin) to the VHS VTR (AG-6400, etc.)(J-type,10-pin).
CCQX-3	XLR-type 4-pin	◁—▷	14-pin	Dark gray	Used when connecting the camera (XLR-type, 4-pin) to the CMA-8A/8ACE or AC-500/500P AC adaptor (14-pin).
CCA-7 (CCA-7-5/25/50/100)	10-pin	◁—⊏	10-pin	Black	Used when connecting the RM-M7G remote control unit to the DXC-537A/537AP.
CCQ-AM (CCQ-10/25/50/100AM)	14-pin	⊐—▷	14-pin	Gray	Used when connecting the CA-327/327P (14-pin) to the CCU-M5/M5P (14-pin).
CCQ-BRS (CCQ-2/5/10/25/50BRS)	14-pin	⊐—▷	14-pin	Blue	Used when connecting the CA-327/327P (14-pin) to the VO-8800/8800P, BVU-150/150P or EVV-9000/9000P + VA-90/90A (14-pin).
CCQJ-2	14-pin	⊐—▷	J-type 10-pin	Gray	Used when connecting the CA-327/327P (14-pin) to the VHS VTR (AG-6400, etc.) (J-type, 10-pin).
CCDQ-06	DIN 4-pin	◁—▷	14-pin	Black	Used when connecting the CCU-M5/M5P (DIN 4-pin) to the CMA-8A/8ACE (14-pin).

Sample Video System Configurations

This section introduces 5 sample systems.

Multi Camera System

This system uses two cameras, each of which shoots from different angles. Their images are switched and recorded while special effects are added. Further, if you add a remote control unit, you can make various adjustments to the camera, such as color adjustment, at hand.


Preset monitor
Program monitor
CA-537/537P camera adaptor
NP-1B battery pack
DXC-537A/537AP (Camera 1)
VCT-14 tripod adaptor
Tripod/dolly
RM-M7G camera remote control unit
VIDEO
VIDEO
PST OUT
PGM OUT 1
PGM OUT 2
VTR
Color special effect generator
Battery pack
Battery pack
Carrying case
CA-537/537P
NP-1B
DXC-537A/537AP (Camera 2)
VCT-14
RM-M7G

Multi camera system

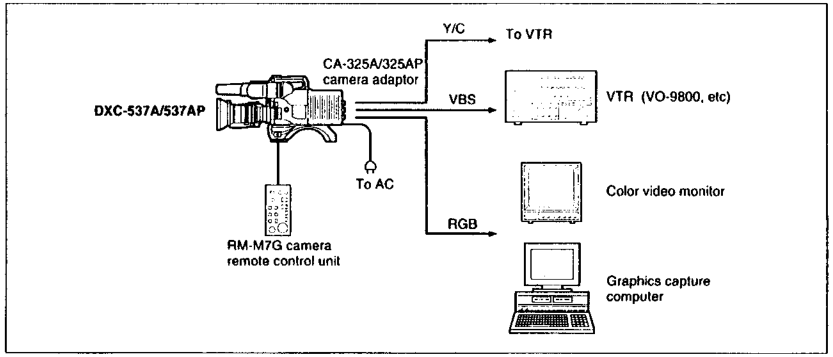
Adjusting the picture tone of the cameras

When two or more cameras are used in a system the subcarrier* (SC) phase and the horizontal (H) phase of each camera should be adjusted to avoid picture tone shift or horizontal sync deviation by switching cameras.
Use one of the cameras as a reference, and adjust each camera so that its subcarrier phase and the horizontal phase are the same as those of the reference camera.

1. Adjust the subcarrier phase roughly by using the SC PHASE selector.
2. Adjust the subcarrier phase precisely by using the SC PHASE control while checking the phase on a vector scope.
3. Adjust the horizontal phase by using the H PHASE control while checking the phase on a video monitor. For precise adjustment, use a waveform monitor or oscilloscope.

Computer Graphics System

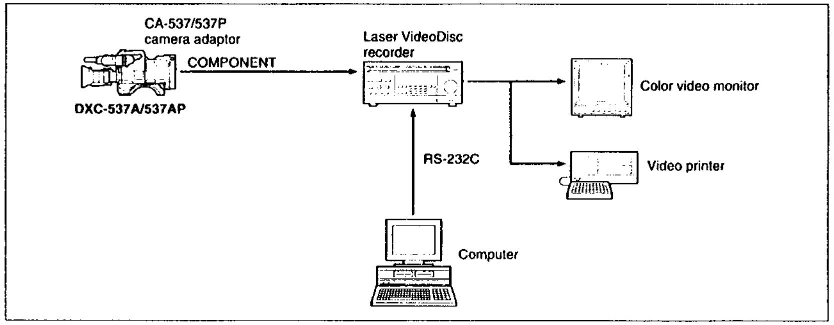
This is a system for creating computer graphics from the images shot with the video camera.


Y/C
To VTR
CA-325A/325AP camera adaptor
DXC-537A/537AP
VBS
VTR (VO-9800, etc)
To AC
Color video monitor
RGB
RM-M7G camera remote control unit
Graphics capture computer

Computer graphics system

Laser Video Disc Recording System

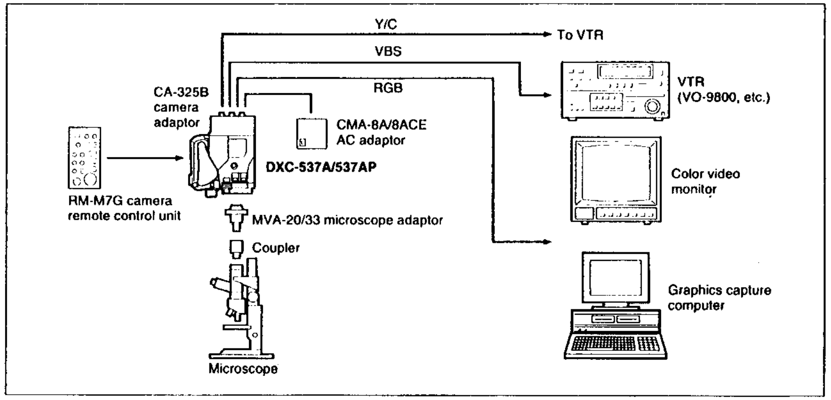
The images shot with the video camera and still pictures can be recorded and stored on a video disc. By using a computer, much of valuable video information can be made into a data base on a video disc.


CA-537/537P camera adaptor
COMPONENT
DXC-537A/537AP
Laser VideoDisc recorder
Color video monitor
RS-232C
Video printer
Computer

Making a video data base

Microscope Recording System

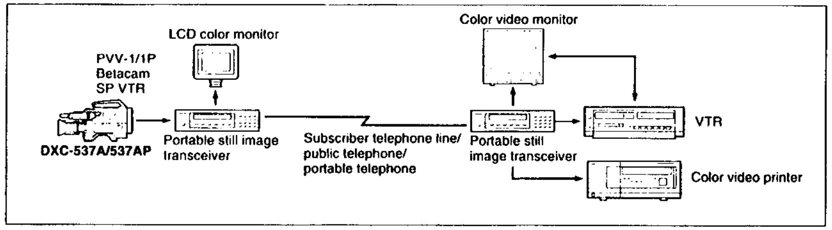
This is a system for shooting an image captured by a microscope. A microscope adaptor is required.


Y/C
To VTR
VBS
RGB
CA-325B camera adaptor
CMA-8A/8ACE AC adaptor
DXC-537A/537AP
RM-M7G camera remote control unit
MVA-20/33 microscope adaptor
Coupler
Microscope
VTR (VO-9800, etc.)
Color video monitor
Graphics capture computer

Microscope recording system

Still Image Transmitting System

Using a still image transceiver, the images shot with the camera can be digitally processed, stored in the memory and transmitted through a telephone line. An on-site video report using this system is useful for appropriately determining the conditions in an emergency.


PVV-1/1P Betacam SP VTR
DXC-537A/537AP
LCD color monitor
Portable still image transceiver
Subscriber telephone line/ public telephone/ portable telephone
Color video monitor
Portable still image transceiver
VTR
Color video printer

Basic system for still picture transmission

Chapter 6
Maintenance

This chapter provides troubleshooting and maintenance information concerning the camera.

Warning System 6-2
Troubleshooting 6-4
Maintenance 6-5
  Cleaning 6-5
  Condensation 6-7

Warning System

When a problem occurs when the power is on or during operation, warnings are given:

- by the REC/TALLY and BATT indicators in the viewfinder
- by a message on the viewfinder screen
- by the Tally lamp
- by the WARNING lamp in the display window and the alarm sound on the VTR (only with the EVV-9000/9000P, PVV-1/1P and BVV-5/5PS)

The following table shows the warnings and how to deal with them.

Warnings and how to deal

Camera			VTR					
REC/ TALLY indicator and tally lamp	**BATT indicator**	**View-finder display**	**WARN-ING lamp**	**Display window**	**Alarm sound** ●) ●) ●) ●) 4 beeps/sec. ●))) 1 beep/sec. ●))))))))) continuous beep	**Problem**	**VTR action**	**What to do**
●)))	—	—	●)))	RF lights. a)	●) ●) ●) ●) a)	Video head gaps are clogged[1], or there is a problem in the recording circuit.	Beeps after detecting head clogging.	Clean the heads. *(see page 6-6)* If the recording quality is still poor, turn the power off and consult your Sony dealer.
●)))	—	—	●)))	SERVO lights.	●) ●) ●) ●)	Servo lock is lost.	Recording continues, but the quality is poor.	Turn the power off and consult your Sony dealer. (The SERVO indicator may flash momentarily when recording starts. This is not a problem.)
●)))	—	—	☼	HUMID lights.	●) ●) ●) ●) a) ●))))))))) b)	Condensation exists on the head drum.	Recording continues, but stops if the tape sticks to the head drum. Playback, fast-forward or rewind stops.	Stop the tape. Turn off the power, turn it on again and wait until the HUMID indicator goes off.
●)))	—	—	●)))	SLACK lights.	●)))))))))	The tape cannot be wound properly.	VTR stops. (Refer to the service manual or maintenance manual of the VTR.)	Eject the cassette. Close the cassette holder, and turn the power off after the top panel of the cassette holder has lowered completely. Then consult your Sony dealer.)
✸	—	—	✸ a)	TAPE END flashes. a)	●)))	The tape is wound close to the end.	Operation continues.	Change the cassette, if necessary.
●)))	—	—	☼	TAPE END flashes.	●)))))))))	The tape has reached its end.	Recording, playback or fast-forward stops.	Change the cassette.
✸	✸	BATT 10.7 V	✸	BATTERY flashes.	●))) a)	Battery is almost exhausted.	Operation continues.	Change the battery, if necessary.
●)))	☼	BATT 10.7 V	☼	BATTERY E flashes.	●)))))))))	Battery is exhausted.	Operation stops.	Change the battery.

☼ continuous light ✸ 1 flash/sec. ●))) 4 flashes/sec.

a) During recording only
b) During playback, fast-forward and rewind

For the warning messages displayed in the viewfinder, see "Viewfinder Display" on page 1-14.

If an abnormality occurs with a portable VTR

When a portable VTR is used, warnings are given by the tally lamp, and the REC/ TALLY and BATT indicators inside the viewfinder. (Error messages do not appear on the viewfinder screen.)

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[1] **Clogging of video head gaps**
If the VTR remains in a recording standby or pause mode for a long duration of time, the video heads abrade the same portion of the tape repeatedly. As a result, the magnetic powder of the tape adheres to the video heads and the recording quality becomes poor.

Troubleshooting

If you think you have a problem during operation, check through the following list. Should any difficulty persist, consult your Sony dealer or local authorized Sony service facility.

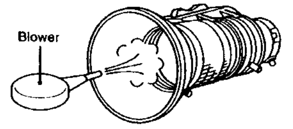
Symptom	Cause	Reference page
The power cannot be turned on.	• The battery is not installed.	2-28
	• The POWER switch on the camera or VTR is set to OFF. (Camcorder system)	2-31
	• The connection between the camera and VTR is not good, or the power connection is not good. (Camcorder system)	2-8, 2-27
	• The VTR cannot supply the power to the camera. (Portable VTR not mode by Sony make)	2-25
The battery is quickly discharged.	• The battery capacity is lowered (memory effect) because you charged it before using it up completely.	2-30
	• The battery pack has not been fully charged.	2-29
	• Incorrect care of the battery.	2-29
	• You have repeatedly started/stopped recording or frequently used motorized zooming, rewind, fast-forward and other operations which consumed much battery power.	--
The image on the whole screen is bluish or reddish.	• The white balance is not adjusted.	3-9
	• The FILTER selector or WHITE BAL selector setting is different from what it was when the white balance was adjusted.	3-10
	• The ATW switch is set to ON. (Since the ATW function is provided for emergency use, it is not perfect.)	3-9
	• The AUTO W/B BAL switch inadvertently flipped to WHT during recording.	3-7
	• The lighting conditions or light source are different from what they were when the white balance was adjusted. (Readjust the white balance.)	3-9
Black in the image is bluish or reddish.	• The black balance is shifted due to the change of ambient conditions.	3-8
Recording does not start or stop.	• The power is not supplied.	2-27
	• The setting of the VTR switch on the camera adaptor is incorrect.	2-26
Audio cannot be recorded.	• The setting of the VTR switch on the camera adaptor is incorrect.	2-26
The image in the viewfinder is blurred.	• The image is out of focus.	3-5
	• The flange focal length of the lens is not correct.	2-37
	• The lens is dirty.	6-5
	• The distance from the camera to the object is too short (Use close-ups.)	3-17

Maintenance

Cleaning

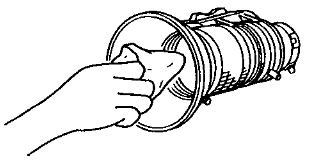
Cleaning and care of the lens

- Perform lens maintenance and inspection once a year. If necessary, have the lens overhauled.
- Use a blower or soft brush to clean off dust on the surface of the lens. Do not rub on the lens when it is dusty.



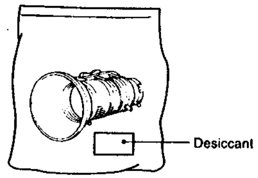
Blowing off the dust on the lens

- If the lens is soiled with grease or fingerprints, moisten a clean cotton cloth or lens cleaning paper with a commercially available lens cleaning liquid, and wipe off the dirt with a circular movement of the cloth or paper moving from the center to the edge of the lens.



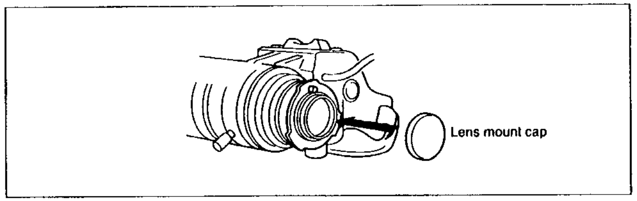
Wiping off the dirt with lens cleaning paper

- If you use the camera in rain, snow or any other place where it may get wet, cover it carefully. After using the camera in such a place, wipe off the moisture with dry cloth, and seal it in a plastic bag together with a desiccant until it drys completely.



Sealing in a plastic back with a desiccant

- Avoid attaching and removing the lens in a dusty place.
- When the lens is removed, attach the lens mount cap to keep dust away from the inside of the lens mount.



Attaching the lens mount cap

Cleaning the viewfinder

Use a commercially available blower to remove dust from the CRT screen and mirror inside the viewfinder barrel.

Cleaning the camera head

Clean the cabinet, panel and controls with a soft, dry cloth. If the dirt is extremely heavy, use a cloth moistened with a mild detergent solution, then wipe it off with a dry cloth.
Do not use any type of solvent, such as alcohol or benzine which might damage the finish.

Cleaning the video heads

When playback pictures are noisy and hardly visible, the video heads may be dirty and must be cleaned. Clean the video heads by using a cleaning cassette.
For details, see the instructions manual of the VTR.

Replacing the video heads

If the picture is still noisy after cleaning, replace the video heads. The life of the heads is about 500 to 1000 hours of use. To replace the heads, consult your Sony dealer.

Condensation

If you move the unit from a very cold place to a warm place, or use it in a very humid location, condensation may form on the head drum, tape and lens. If the unit is operated in this state, the tape may adhere to the drum, and cause a failure or even permanent damage. To avoid this, take the following precautions:

- When moving the unit from a cold place to a warm place, do not insert a cassette. If already inserted, eject the cassette.
- If moisture has condensed in the unit while a cassette is inserted, remove the cassette by pressing the EJECT button. Then turn off the power and wait until the condensation disappears completely.

Appendix

Specifications A-2
Glossary A-6

Specifications

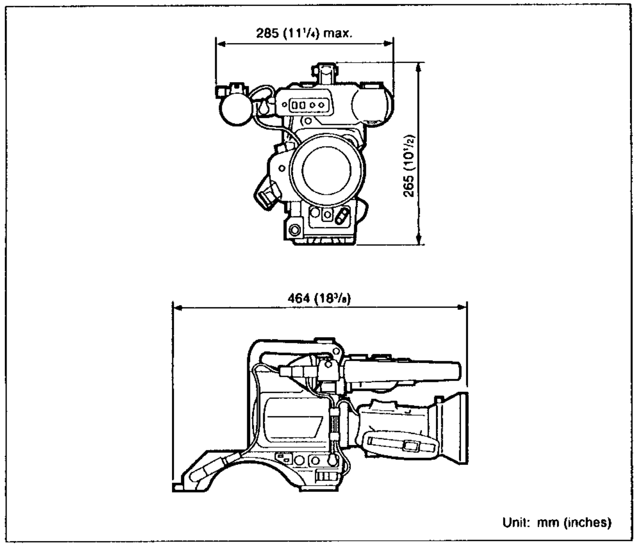
Camera Head DXC-537A/537AP

The DXC-537A uses the NTSC system and the DXC-537AP uses the PAL system.

Image device	2/3" Interline-transfer CCD, 3-chip
Picture elements	768 × 493 (h/v) (NTSC) 786 × 581 (h/v) (PAL)
Sensing area	8.8 mm × 6.6 mm (equivalent to a 2/3-inch pickup tube)
Built-in filters	1: 3200 K 2: 5600 + 1/4 ND 3: 5600 K 4: 5600 K + 1/16 ND
Lens mount	Sony 2/3" Bayonet mount
Signal system	EIA standards, NTSC color system (DXC-537A) CCIR standards, PAL color system (DXC-537AP)
Scanning system	525 lines, 2:1 interlace, 30 frames/sec. (NTSC) 625 lines, 2:1 interlace, 25 frames/sec. (PAL)
Scanning frequency	Horizontal: 15.734 kHz (NTSC) 15.625 kHz (PAL) Vertical: 59.94 Hz (NTSC) 50.00 Hz (PAL)
Sync system	Internal External with the BS or VBS signal supplied to the GEN LOCK IN connector (when the CA-537/537P, CA-325A/325AP or CA-325B is used) or the reference signal input to the VTR/CCU/CMA connector from the GEN LOCK IN connector of the CCU-M5/M5P/M7/M7P (when the CA-537/537P is used)
Horizontal resolution	750 TV lines (center)
Minimum illumination	13 lx with F1.8, +18 dB 7.5 lx with F1.4, +18 dB 1.9 lx with F1.4, +30 dB
Sensitivity	2000 lx with F8.0 (Typical) at 3200 K, 89.9% reflectance
Gain selection	–3, 0, 3, 6, 9, 12, 18 or 24 dB, selectable
Video output	Composite signal: 1.0 Vp-p, sync negative, 75 ohms unbalanced R/G/B signal: 1.4 Vp-p Y/C separate signal : Y: 1.0 Vp-p, sync negative, unbalanced C: burst level without sync 0.286 Vp-p (NTSC) or 0.3 Vp-p (PAL)
Signal to noise ratio	62 dB (NTSC, Typical) 60 dB (PAL, Typical)
Registration	0.05% for all zones, without lens
Inputs/Outputs	Interface: 50-pin DIN VIDEO OUT: BNC-type, 75 ohms, unbalanced LENS: 2/3-inch lens connector (12-pin) VF: 8-pin DIN REMOTE: 10-pin MIC: XLR-type (3-pin)
Power requirements	12 V DC (10.5 to 17 V DC)
Power consumption	10.5 W

Operating temperature	−10°C to +45°C (14°F to 113°F)
Storage temperature	−20°C to +60°C (−4°F to 140°F)
Mass	2.3 kg (5 lb 1 oz)
Dimensions	See the illustrations below.

Dimensions



Specifications

Zoom Lens VCL-916BYA

Focal length	9.0 mm to 144 mm
Zoom	Manual and motorized, selectable Zooming ratio: 16x
Maximum aperture ratio	1:1.8
Iris control	Manual and auto, selectable F1.8 to F16 and C (closed)
Range of object field (at the distance of 0.9 m)	
W (wide angle):	815 × 611 mm (32⅛ × 24⅛ inches)
T (telephoto):	51 × 38 mm (2⅛ × 1½ inches)
Minimum object distance	0.9 m (35½ inches)
Filter thread	77 mm dia., 0.75 mm pitch (Lens) 86 mm dia. 1 mm pitch (Hood)
Mount	Bayonet* mount, 2/3 inch
Mass	About 1.2 kg (2 lb 10 oz) without hood
Dimensions	About 120 × 197 mm (dia./length) with hood (when focus is ∞) (4¾ × 7⅞ inches)

Viewfinder DXF-501/501CE

Picture tube	1.5-inch monochrome
Indicators	REC/TALLY indicator BATT indicator SHUTTER indicator GAIN UP indicator
Resolution	600 TV lines
Power requirements	12 V DC
Power consumption	2.3 W
Mass	About 500 g (1 lb 2 oz)
Dimensions	About 182 × 68 × 205 mm (w/h/d) (7¼ × 2¾ × 8⅛ inches)

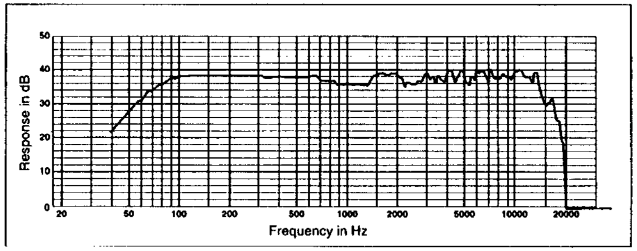
Carrying Case LC-421

Mass	About 7.7 kg (15 lb 7 oz)
Dimensions	About 790 × 440 × 340 mm (w/h/d) (31⅛ × 17⅜ × 13½ inches)

Microphone ECM-670

Type	Electret condenser microphone
Directivity	Super cardioid
Frequency response	70 – 16,000 Hz
Sensitivity	– 44 ± 3 dB (0 dB = 1 V/Pa at 1000 Hz)
Maximum input sound pressure level	125 dB SPL (at 1000 Hz, 1% T.H.D. typical)
Signal-to-noise ratio	More than 70 dB
External power supply	11 V to 52 V DC
Dimensions	Approx. 21 dia. × 225.5 mm (27/32 dia. × 9 inches) not incl. wind screen
Mass	Approx. 165 g (5.8 oz)

Frequency response



Accessories Supplied

Wind screen (supplied with DXC-537AK/AL/APK/APL only) (1)
Lens mount cap (1)
Chart for flange focal length adjustment (1)
Operating Instructions (1)

Design and specifications are subject to change without notice.

Glossary

Aliasing (Page 1-20)
Distortion of the signal caused by the overlap of the base band signal and the lower sideband signal when the signal is demodulated.

ATW function (Page 3-13)
Abbreviation of Automatic Tracing White balance function. A function which controls the white balance to the optimum value tracing the variations in the current lighting conditions.

Bayonet type (Page A-4)
A type of lens mount. The lens is inserted into the lens mount and fixed in place by rotating a ring.

Black balance (Page 3-7)
To balance the black level of the R, G and B signals so that black has no color.

Black set (Page 3-7)
A reference level for black balance adjustment. To set the reference black level of the R, G and B channels so that the black looks black even if the gain of the video amplifier is increased.

CCD (Page 1-2)
Abbreviation of charge-coupled device. A semiconductor which is used in place of a camera tube. It converts light into an electrical charge and outputs the electrical charge in the form of voltage variations.

Center marker (Page 4-17)
A cross that indicates the center of the image on the viewfinder screen.

Color bar signals (Page 2-35)
Test signals displayed on the screen as vertical stripes of different colors. Used for the adjustment of hue and saturation by a video camera and video monitor.

Color matrix (Page 1-6)
The actual color of the subject and the color in a person's memory are not always the same. Therefore, if the color of a person's skin, for example, is reproduced faithfully, it becomes yellowish and looks unhealthy. The color matrix function compensates such color differences.

Color temperature (Page 3-4)
The color quality of lights, expressed in Kelvins (K). Color temperature is lower when the color is reddish and higher when bluish.

Condensation (Page 6-7)
Moisture which condenses on tape transport mechanisms. The tape tends to adhere to and be damaged by condensation on the head drum.

CRT (Page 1-7)
Abbreviation of cathode-ray tube. A tube type display. A CRT is used in a camera viewfinder so you can monitor what you are shooting.

Depth of field (Page 3-3)
The range in front and in the rear of the subject that seems to be in focus. The depth of field is great when the range is big, and narrow, when the range is small.

Diopter (Page 2-33)
A unit to indicate the degree of convergence or divergence of a bundle of rays. Also means a device used on the ocular lens of video cameras or telescope to correct the vision of the operator.

Ff
See Flange focal length.

Flange focal length (Page 2-37)
Distance from the plane of the lens mounting flange to the image focal plane.

Flare
Light unnecessary for the focus of an image may stray into the image plane and interfere with the image. Flare is a loss of contrast in the image resulting from this phenomenon.

Flicker (Page 4-12)
Repeated change of brightness on the screen, which is caused by the frequency difference between the camera's scanning and the variations in the lighting.

Gain (Page 1-6)
Amplified amount of video signal. Measured in "dB" units.

Gamma curve (Page 1-3)
The video camera compensates for the non-linearity of the luminous characteristics of the video monitor. This is called gamma compensation. This characteristic curve is called the gamma curve.

Gen-lock (Page 5-9)
Abbreviation of Generator Lock. Synchronizes every piece of video equipment to a reference (master) sync.

HAD (Page 1-2)
Abbreviation of Hole-Accumulated Diode. A CCD sensor structure designed to suppress certain types of noise inherent in CCDs.

Horizontal resolution (Page 1-2)
Resolution of the screen in the horizontal direction. It is expressed as the number of vertical lines which can be distinguished when shooting a test chart.

Hunting (Page 3-3)
Repeated brightening and darkening of an image resulting from repeated responses to automatic iris control.

IRE scale (Page 2-37)
A video level measurement scale standardized by the Institute of Radio Engineers, now called the Institute of Electrical and Electronic Engineers (IEEE).

Iris (Page 1-5)
A diaphragm which controls the amount of light passing through the lens.

Knee point (Page 1-6)
Normally the video signal is cut off at a brightness level of 110% (% is a unit to indicate the brightness level). If the signal level is compressed, however, higher level signals can be reproduced. The knee point is the level with which signal compression starts.

Luminance signal
A signal that determines the brightness of the picture. Also called the Y signal.

ND filter (Page 3-3)
Abbreviation of Neutral Density filter. ND filters reduce the amount of incident light equally accross the entire visible wavelength range without affecting color.

Pedestal level (Page 1-17)
A black level which is the absolute black level of a video signal. Normally, a video signal refers to the setup level (about 0% to 10% of video amplitude above the blanking level) as the black level.

Picture elements (Page 1-2)
Dots that compose an image. The more picture elements, the higher the resolution of the picture.

Return video (Page 3-6)
The picture from a VTR during recording, the playback picture during playback, or the signal from a control console such as a video switcher.

Shutter speed (Page 4-12)
The length of time a shutter remains open. The higher the shutter speed, the more clearly an moving object can be shot.

Subcarrier (Page 5-11)
Color information contained in a composite video signal. Its amplitude is for color saturation and its phase relative to the color burst signal is for hue.

S-video output connector (Page 2-25)
A connector for outputting Y (luminance) and C (chrominance) signals separately. Transferring a video signal in this separated form reduces interference between Y and C signals and helps reproduce noiseless images.

Sync signal
A reference signal consisting of vertical and horizontal sync signals used for synchronizing the scanning patterns of the video camera and the monitor.

VBS (Page 5-12)
Abbreviation of Video, Burst and Sync signal. It means the same as composite video signal.

Vertical smear (Page 1-3)
A bright vertical line which appears on the screen when shooting a very bright object with a CCD video camera. Also called smear.

Viewfinder (Page 2-33)
A video monitor attached directly to a video camera.

White balance (Page 1-5)
Adjustment of R, G and B signal levels, so that white objects are reproduced correctly as true white.

Zebra pattern (Page 4-4)
Striped patterns which appear in the viewfinder to indicate areas of the picture where the video level is about 70% to 80% IRE (for NTSC) or 490 mV to 560 mV (for PAL.) They are used to confirm the image level of the subject.

Zoom (Page 3-5)
To change the focal length of the lens gradually from wide-angle to telephoto (zoom in), and from telephoto to wide-angle (zoom out) without actually changing the lens.

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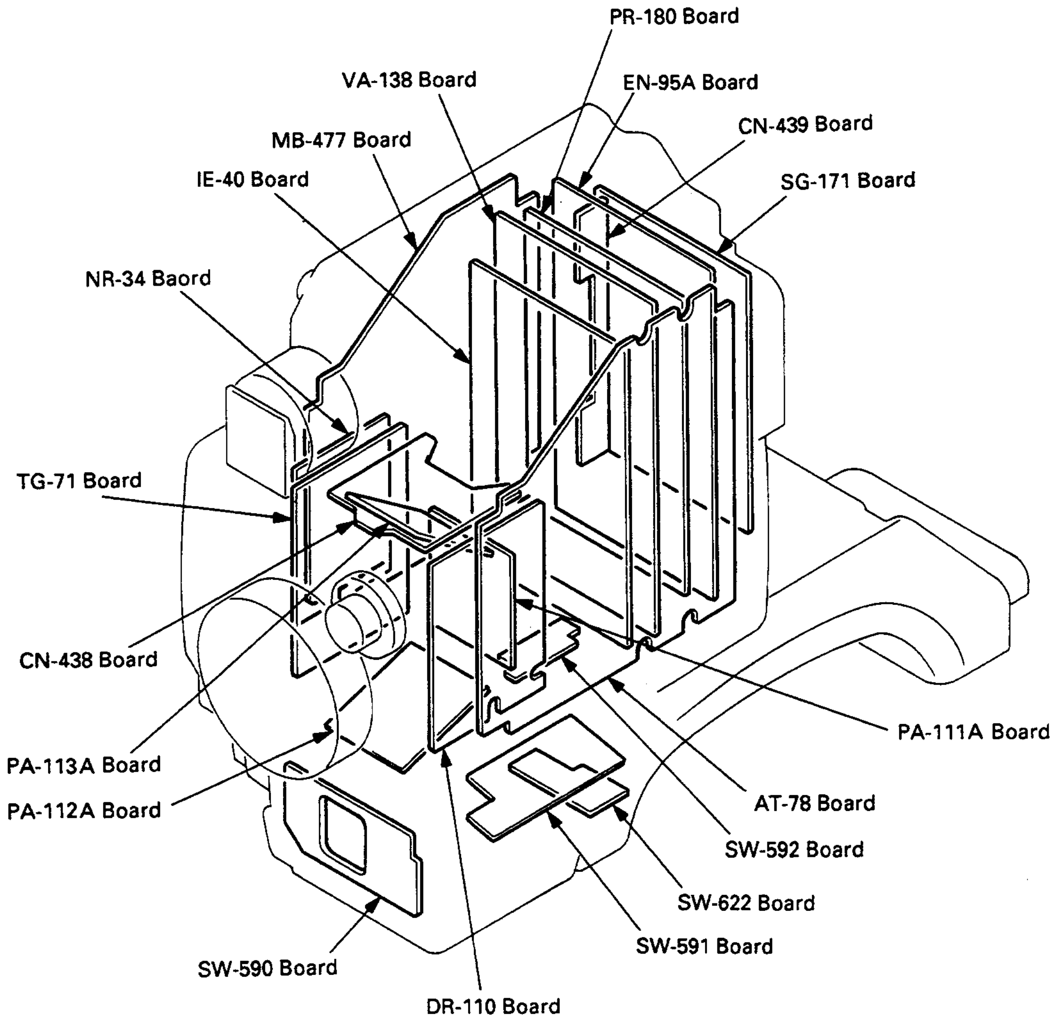
SECTION 2
SERVICE INFORMATION

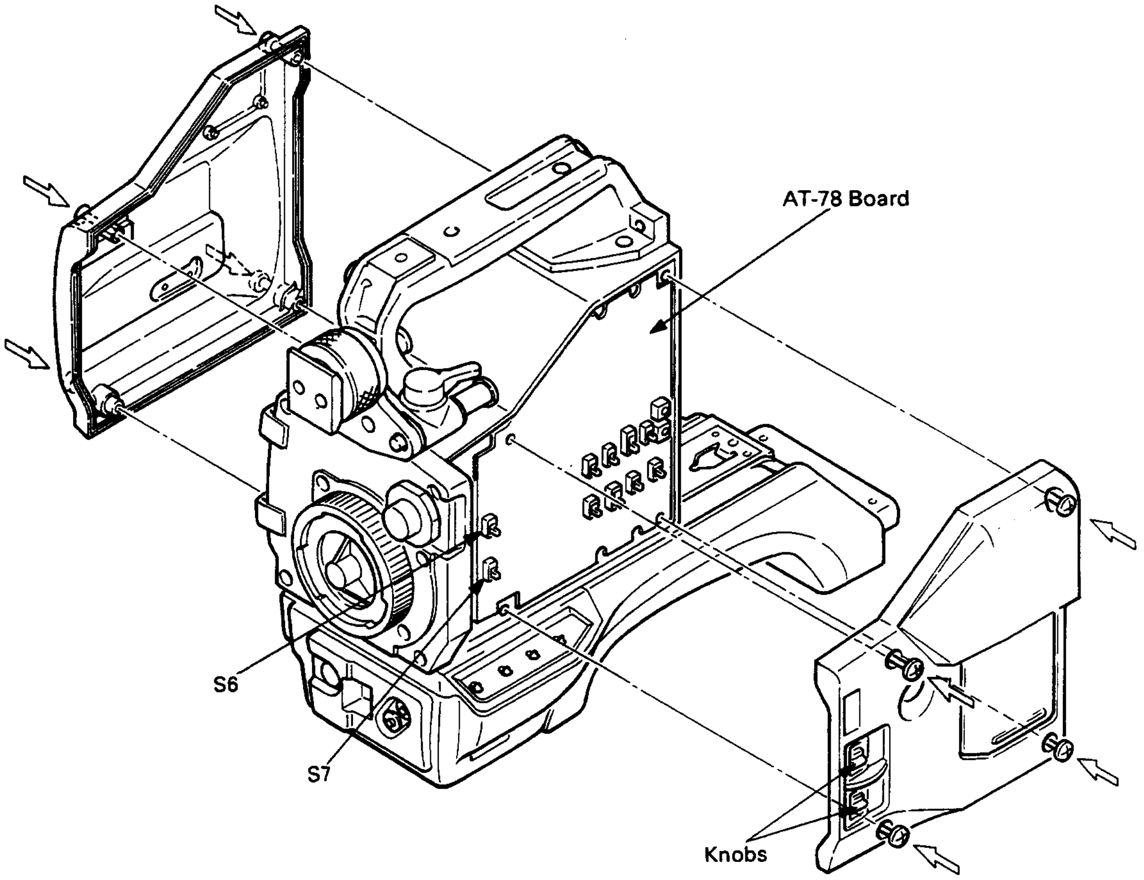
2-1. BOARD LAYOUT


PR-180 Board
VA-138 Board
EN-95A Board
CN-439 Board
MB-477 Board
IE-40 Board
SG-171 Board
NR-34 Baord
TG-71 Board
CN-438 Board
PA-111A Board
PA-113A Board
AT-78 Board
PA-112A Board
SW-592 Board
SW-622 Board
SW-591 Board
SW-590 Board
DR-110 Board

2-2. REMOVAL OF CABINET

Loosen the four screws respectively to remove the side plates.

Note: Before installing the right side plate, set both of switches S6 and S7 on the AT-78 board to bottom position and put two knobs for A. IRIS MODE and ATW switches down.



2-3. REPLACEMENT OF MAIN PARTS

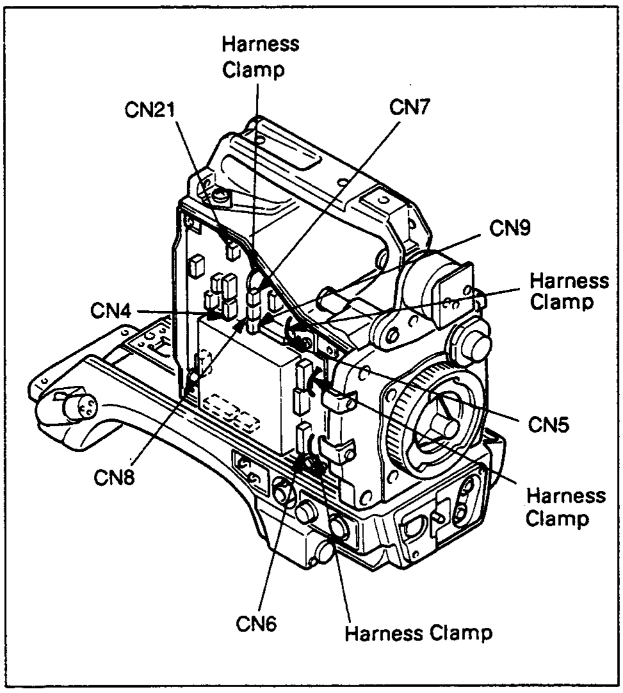
Note: To replace the CCD, the whole CCD unit should be replaced.

1. Remove the lens and viewfinder referring to the instruction manual.

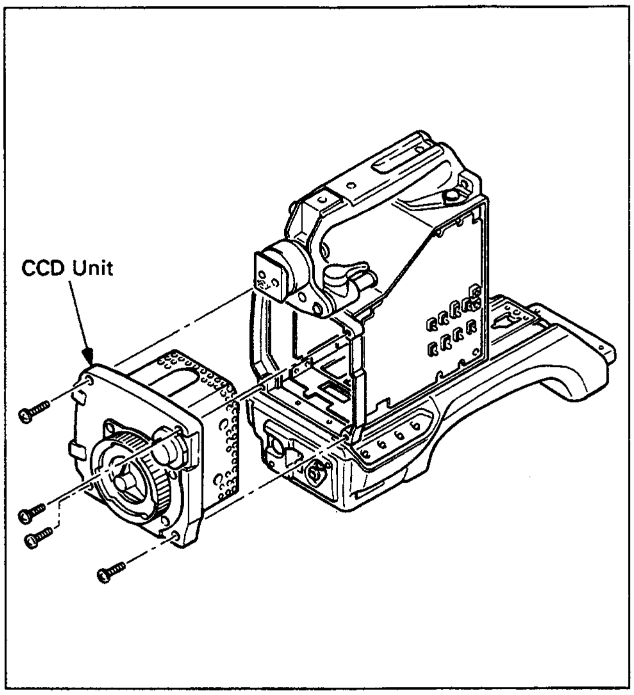
   Note: Attach a mount cap to the lens mount to protect the prism block.

2. Remove the left side plate referring to Section 2-2 "REMOVAL OF CABINET".

3. Disconnect the seven connectors, CN4 to CN9 and CN21. Release harnesses from harness clamps shown in the figure.


Harness Clamp
CN21
CN7
CN9
Harness Clamp
CN4
CN5
CN8
Harness Clamp
CN6
Harness Clamp

4. Remove the four screws and pull out the CCD unit.



5. Install a new CCD unit by reversing procedures for removal.

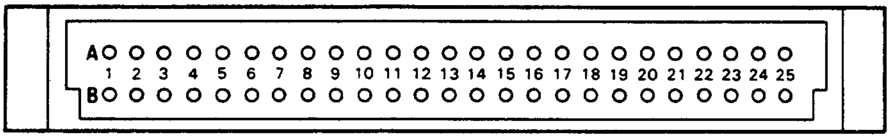
2-4. CONNECTORS AND CABLES

2-4-1. Connector Input/Output Signals

The main connector input/output signals are as follows:

VIDEO OUT (BNC); 1.0 Vp-p ± 0.1 V, sync negative 75Ω

CAMERA/CA (50P)



(EXTERNAL VIEW)

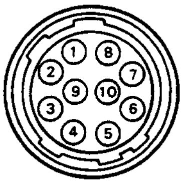
Pin No.	Signal	Specification
A1	MODE ID	OPEN : COMP, GND : R/G/B
B1	GND (CHASSIS)	
A2	MIC (Y) OUT	-60 dBm
B2	MIC (X) OUT	
A3	MIC (G) OUT	
B3	(SPARE)	
A4	REC TALLY IND IN	Zi ≧ 600Ω
B4	(SPARE)	
A5	VTR START/STOP OUT	
B5	(SPARE)	
A6	(SPARE)	
B6	(SPARE)	
A7	(SPARE)	
B7	(SPARE)	
A8	GENLOCK VIDEO (G) IN	Zi ≧ 1 kΩ
B8	GENLOCK VIDEO (X) IN	
A9	SYNC (G) OUT	H : 4.0~5.5 Vp-p : NEGATIVE L : 0 ± 0.4 Vdc Zo ≦ 2 kΩ
B9	SYNC (X) OUT	
A10	PB RET VIDEO (G) IN	Zi ≧ 10 kΩ
B10	PB RET VIDEO (X) IN	
A11	COLOR FRAMING PULSE	H : 4.0~5.5 Vp-p Zo ≦ 2 kΩ L : 0 ± 0.4 Vdc
B11	VF VIDEO CONT IN	CAM : OPEN Zi ≧ 1 kΩ, PB : 0 V
A12	VBS (G) OUT	1.0 Vp-p, SYNC NEGATIVE Zo = 75Ω ±5%
B12	VBS (X) OUT	
A13	VTR SAVE CONT OUT	STBY: 4.0~5.5 Vp-p Zo ≦ 100Ω SAVE: 0 ± 0.25 V
B13	VTR/CCU CONT OUT	VTR : 0 ± 0.25 V Zo ≦ 1 kΩ CCU : 5.0 ± 0.5 V

Pin No.	Signal	Specification
A14	CHROMINANCE (G) OUT	NTSC : 0.286 Vp-p ±10% PAL : 0.300 Vp-p ±10% Zo ≦ 75Ω ±5%
B14	CHROMINANCE (X) OUT	
A15	LUMINANCE (G) OUT	1.0 Vp-p, SYNC NEGATIVE Zo ≦ 75Ω ±5%
B15	LUMINANCE (X) OUT	
A16	VIDEO GND OUT	R/G/B 1.4 Vp-p, POSITIVE Zo ≦ 75Ω ±5% COMPONENT OUT *1
B16	R/R-Y VIDEO OUT	
A17	G/Y VIDEO OUT	
B17	B/B-Y VIDEO OUT	
A18	BATT ALARM/S. DATA	
B18	REC REVIEW CONT OUT	GND ; REC REVIEW
A19	(SPARE)	
B19	(SPARE)	
A20	+8.5 V OUT 9.0 V	8.3 V~9.1 V
B20	+5 V OUT	±0.1 V
A21	-5 V OUT	±0.1 V
B21	GND	REG, GND
A22	POWER +12 V DC IN	10.6 V to 17.0 Vdc
B22	POWER +12 V DC IN	
A23	POWER +12 V DC GND	GND for ±12 Vdc
B23	POWER +12 V DC GND	
A24	(SPARE)	
B24	(SPARE)	
A25	GND (CHASSIS)	CHASSIS GND
B25	GND (CHASSIS)	

*1

	UC	EK
Y	0.714 Vp-p	0.700 Vp-p
R-Y	0.700 Vp-p	0.525 Vp-p
B-Y	0.700 Vp-p	0.525 Vp-p

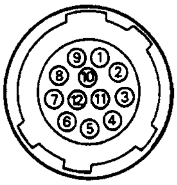
REMOTE (10P, FEMALE)



(WIRING SIDE)

Pin No.	Signal	Specification
1	(SPARE)	
2	VBS (RM) (X)	1.0 Vp-p, SYNC NEGATIVE
3	VBS (RM) (G)	
4	(SPARE)	
5	VTR START/STOP IN	Zi ≧ 10 kΩ OPEN (4.5 ± 0.5 V) 0 ± 0.5 V
6	S. DATA (X)	0 to 5 V Zi ≧ 10 kΩ
7	S. DATA GND	GND for S. DATA
8	REC TALLY IND OUT	Zo ≧ 600Ω
9	POWER +12 V DC GND	GND for +12 Vdc
10	POWER +12 V DC OUT	10.6 V to 17.0 Vdc

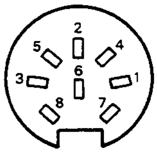
LENS (12P, FEMALE)



(EXTERNAL VIEW)

Pin No.	Signal	Specification
1	VF VIDEO CONT IN	ON : 0 ± 0.5 Vdc
2	VTR START/STOP IN	TRIG : 0 ± 0.5 V
3	POWER +12 V DC GND	GND for +12 Vdc
4	COMPULSORY AUTO IRIS CONT OUT	AUTO : 4.5 ± 0.5 V MANU : 0 + 0.5 V or OPEN
5	IRIS CONT OUT	F16 : 3.4 Vdc F2.8 : 6.2 Vdc
6	POWER +12 V DC OUT	10.6 V to 17.0 Vdc
7	NC	
8	NC	
9	NC	
10	NC	
11	NC	
12	NC	

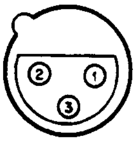
VF (8P, FEMALE)



(WIRING SIDE)

Pin No.	Signal	Specification
1	POWER +12 V DC GND	GND for +12 Vdc
2	REC TALLY IND OUT	Zo ≦ 1.1 kΩ
3	E. SHUTTER IND OUT	Zo ≦ 1.1 kΩ
4	VF VIDEO (G) OUT	GND for VF VIDEO
5	BATT IND OUT	Zo ≦ 1.1 kΩ
6	VF VIDEO (X) OUT	V = 1 Vp-p
7	POWER +12 V DC OUT	10.6 V to 17.0 Vdc
8	GAIN UP IND OUT	Zo ≦ 1.1 kΩ

MIC (3P, FEMALE)



(EXTERNAL VIEW)

Pin No.	Signal	Specification
1	MIC (G) IN	GND for MIC
2	MIC (X) IN	-60 dB BALANCED (0 dB = 0.775 V)
3	MIC (Y) IN	

2-4-2. Connection Connector

Connections made with the connector panels during installation or service, should be made with the connectors or complete cable assemblies specified in the following list, or equivalent parts.

Connector Name	Parts No. and name of connector with cable
REMOTE (10P, FEMALE)	1-506-522-11 CONNECTOR, ROUND 10P, MALE HIROSE HR10A-10P-10P equality or CCA-7-20 Cable assembly (optional)
VIDEO OUT (BNC)	1-560-069-11 PLUG, BNC or B-B cable assembly (Cable length 1.5 m, optional)
VF (8P, FEMALE)	9-994-797-01 CABLE, VF
LENS (12P, FEMALE)	1-564-360-11 CONNECTOR, 12P, MALE HIROSE HR10-10PA-12P equality
MIC (3P, FEMALE)	1-508-084-31 CONNECTOR, 3P, MALE CANNON XLA-3-12C equality or EC-0, 3C2 cable assembly (supplied)

2-5. FUNCTION OF SWITCHES ON PC BOARD

IE-40 board

- S1 (DTL ON/OFF)

When set to "ON", the detail circuit activates and a contour of image is enhanced.
The switch is factory-set to "ON" position.
Set according to use.

VA-138 board

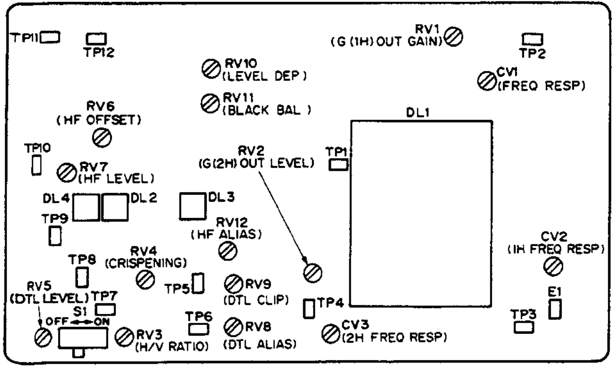
- S1 (FLARE ON/OFF)

When set to "OFF", the flare compensation circuit does not activate.
The switch is factory-set to "ON".

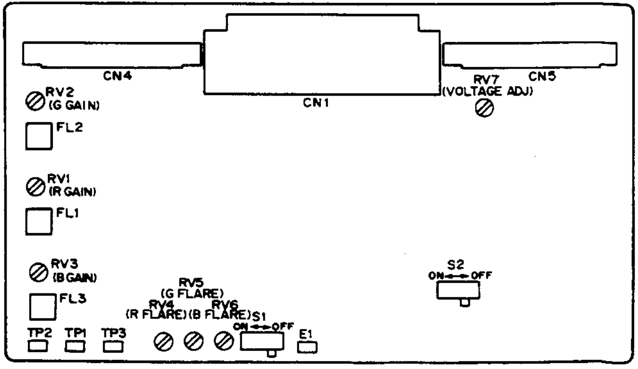
- S2

This switch is not used and set it to "OFF" at all times.

IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV11
(BLACK BAL)
RV6
(HF OFFSET)
DL1
TP10
RV2
(G(2H) OUT LEVEL)
TP1
RV7
(HF LEVEL)
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
TP8
RV4
(CRISPENING)
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
TP4
E1
S1
OFF ←→ ON
TP6
TP3
RV3
(H/V RATIO)
RV8
(DTL ALIAS)
CV3
(2H FREQ RESP)

VA-138 BOARD —COMPONENT SIDE—


CN4
CN1
CN5
RV7
(VOLTAGE ADJ)
RV2
(G GAIN)
FL2
RV1
(R GAIN)
FL1
RV3
(B GAIN)
FL3
S2
ON ←→ OFF
RV5
(G FLARE)
RV4
(R FLARE)
RV6
(B FLARE)
S1
ON ←→ OFF
TP2
TP1
TP3
E1

AT-78 board

- S11 (ADJ ON/OFF)

When set to "ON", the unit is put into ADJ mode, and various adjustments can be performed.
This switch is factory-set to "OFF".

[Procedures]

1. When S11 is set to "ON", characters displayed on the VF screen are all erased and the screen ① will be displayed. (In clock setting, the screen ① will be displayed after setting is complete.)

2. 1) While the screen ① is displayed, by pressing the UP/ON button on the front of camera, data in a memory "EEPROM" is preset as shown in the table and then the screen ② is displayed. Next the screen ③ is displayed and the unit enters the ADJ mode.

ITEMS	PRESET VALUES
R/G/B DARK	Adjusted value is preset
AUTO WHT A/B	Adjusted value is preset
A.IRIS/DTL/M.PED	Setting value is preset
SHUTTER SPEED	1/100 (NTSC), 1/60 (PAL)
CLEAR SCAN	60.4 Hz (NTSC), 50.3 Hz (PAL)
GAIN SW setting	0/9/18 dB
L.L IND/TONE SET	OFF
SAFETY ZONE	90%
CENTER MARKER	ON
CLOCK	12-hour system
Order for displaying year and date	Year, Month, Day

   2) While the screen ① is displayed, press down the DISP CHG switch. The screen ③ will be displayed and the unit enters the ADJ mode. (The electronic shutter does not function regardless of SHUTTER switch (S5/AT-78 board) setting.

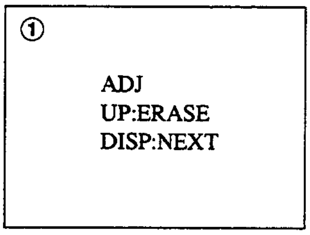
3. 1) While the screen ③ is displayed, by pressing the UP/ON or DOWN/OFF button, data value will be varied from 00h to FFh.
   2) While the screen ③ is displayed, by pressing both the UP/ON and DOWN/OFF buttons simultaneously, data value will show "80h".

4. By using the DISP/CHG switch, adjustment items is changed from 01h to 15h.

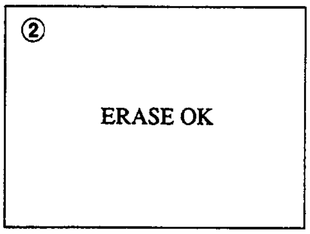
[Adjustment items]

01	G DARK	08	R SHAD BAL	0F	B V SAW
02	G BLACK1	09	B SHAD BAL	10	G VA GAIN
03	R DARK	0A	G H SAW	11	R VA GAIN
04	R BLACK1	0B	R H SAW	12	B VA GAIN
05	B DARK	0C	B H SAW	13	M PRE KNEE
06	B BLACK1	0D	G V SAW	14	R PRE KNEE
07	G SHAD BAL	0E	R V SAW	15	B PRE KNEE

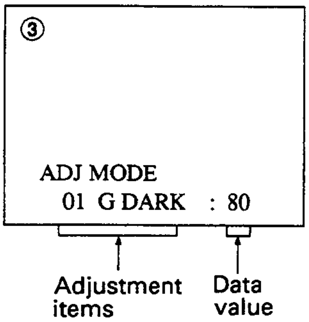
VF screen


①

ADJ
UP:ERASE
DISP:NEXT


②

ERASE OK


③

ADJ MODE
01 G DARK : 80

- **S14 (FD/FM)**

A CCD read mode is selected, field (FD) or frame (FM) integration mode. The switch is factory-set to "FD" position.

Note:
When the EVS switch (S9/AT-78 board) is set to ON, the electronic shutter does not function. However, with the switch S14 set to "FM", electronic shutter can be used under improved vertical resolution. In this condition, CCD sensitivity decreases by half compared to the field integration mode.
When electronic shutter is OFF, a sensitivity does not change and the vertical resolution is increased. On the other hands, more after-images appear bacause of an accumulation time of 1/30 seconds.

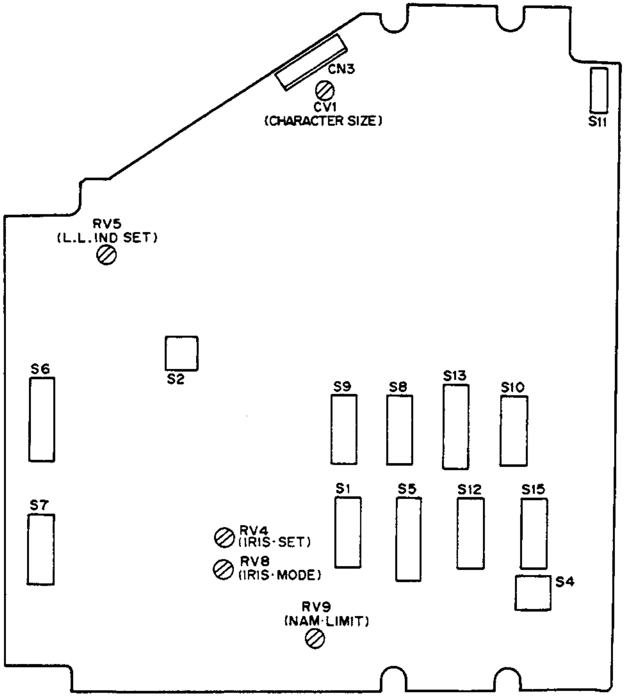
- S16 (90%/STD)
- S17 (80%/STD)

When the MARKER switch (S12/AT-78 board) on the camera side panel is set to "ON", a frame showing 90% (or 80%) of picture being shot (safety zone, factory-setting 90%) and a white cross showing the center marker of screen (center marker) can be displayed on the VF screen.
Combination of the above indications can be changed as shown in the table by using the switches S16 and S17. These are factory-set to "STD" position respectively.

SWITCH SETTING	POSITION OF CURSOR ON VF	SETTING WITH DISP CHG SWITCH
S16 : STD	SAFETY	Selection of 90%/80%
S17 : STD	CENTER	CENTER MARKER ON/OFF
S16 : STD	SAFETY	80% ON/OFF
S17 : 80%	CENTER	CENTER MARKER ON/OFF
S16 : 90%	SAFETY	Not displayed
S17 : STD	CENTER	CENTER MARKER ON/OFF
S16 : 90%	SAFETY	90% ON/OFF
S17 : 80%	CENTER	CENTER MARKER ON/OFF

For other switches on AT-78 board, refer to the instruction manual.

AT-78 BOARD —COMPONENT SIDE—



PR-180 board

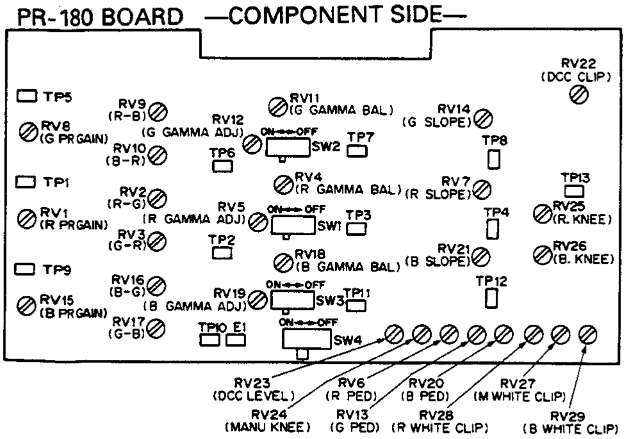
- S1 (R GAMMA ON/OFF)
- S2 (G GAMMA ON/OFF)
- S3 (B GAMMA ON/OFF)

When set to "ON", the gamma correction is performed for the R, G and B video signals so that the overall characteristic of signals from camera to monitor is "γ=1". Normally set to "ON".

- S4 (MATRIX ON/OFF)

When set to "ON", the linear matrix circuit activates to obtain high saturated color reproducibility.
The switch is factory-set to "ON".

PR-180 BOARD —COMPONENT SIDE—


RV22 (DCC CLIP)
TP5
RV9 (R-B)
RV11 (G GAMMA BAL)
RV14 (G SLOPE)
RV8 (G PR GAIN)
RV12 (G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10 (B-R)
TP6
TP1
RV4 (R GAMMA BAL)
RV7 (R SLOPE)
TP13
RV2 (R-G)
RV5 (R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV25 (R. KNEE)
RV1 (R PR GAIN)
RV3 (G-R)
TP2
RV18 (B GAMMA BAL)
RV21 (B SLOPE)
RV26 (B. KNEE)
TP9
RV16 (B-G)
ON↔OFF
RV19 (B GAMMA ADJ)
SW3
TP11
TP12
RV15 (B PR GAIN)
RV17 (G-B)
TP10
E1
ON↔OFF
SW4
RV23 (DCC LEVEL)
RV6 (R PED)
RV20 (B PED)
RV27 (M WHITE CLIP)
RV24 (MANU KNEE)
RV13 (G PED)
RV28 (R WHITE CLIP)
RV29 (B WHITE CLIP)

EN-95A board

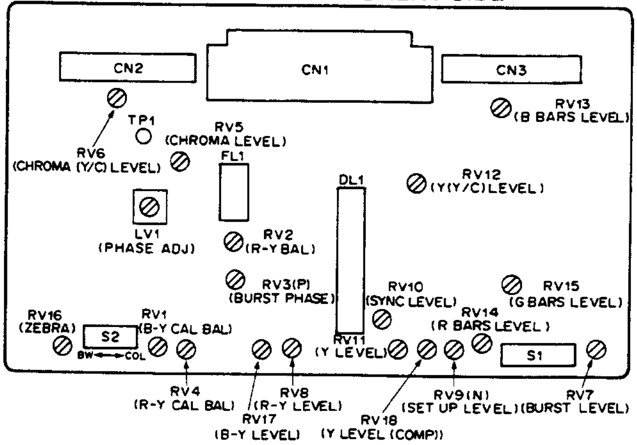
- S1 (BLKG SEL 19H/20H/21H) . . . DXC-537A (NTSC) only

This switch selects V blanking width.
The switch is factory-set to "20H".

- S2 (B/W /COL)

When set to "COL" (color) position, a signal to be sent to a viewfinder is changed from monochrome to color. When a monochrome viewfinder such as the DXF-501/501CE is used, set to "B/W" position.

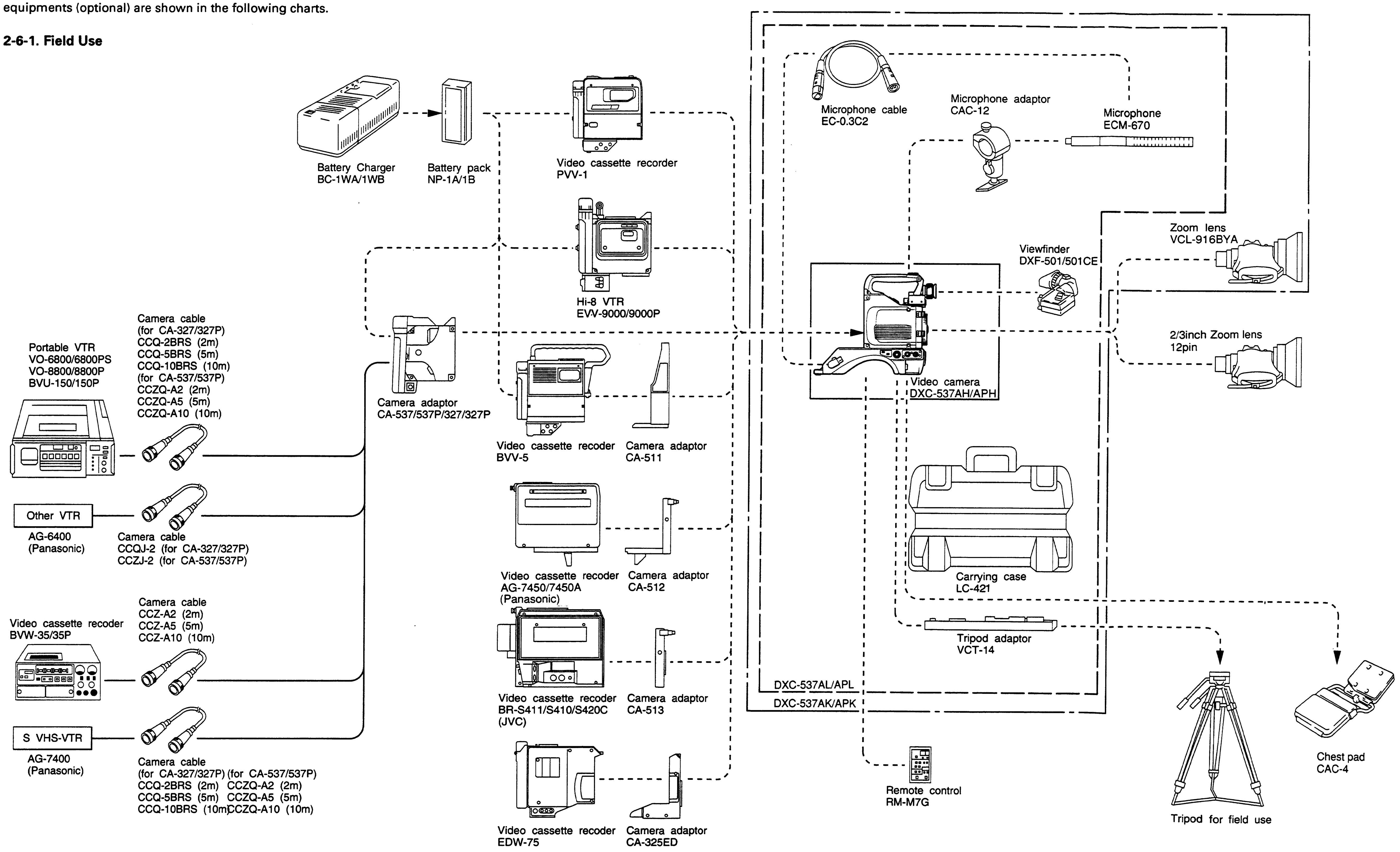
EN-95A BOARD —COMPONENT SIDE—


CN2
CN1
CN3
RV13 (B BARS LEVEL)
TP1
RV5 (CHROMA LEVEL)
RV6 (CHROMA (Y/C) LEVEL)
FL1
DL1
RV12 (Y(Y/C) LEVEL)
LV1 (PHASE ADJ)
RV2 (R-Y BAL)
RV3(P) (BURST PHASE)
RV10 (SYNC LEVEL)
RV15 (G BARS LEVEL)
RV16 (ZEBRA)
RV1 (B-Y CAL BAL)
S2
BW↔COL
RV14 (R BARS LEVEL)
RV11 (Y LEVEL)
S1
RV4 (R-Y CAL BAL)
RV8 (R-Y LEVEL)
RV17 (B-Y LEVEL)
RV18 (Y LEVEL (COMP))
RV9(N) (SET UP LEVEL)
RV7 (BURST LEVEL)

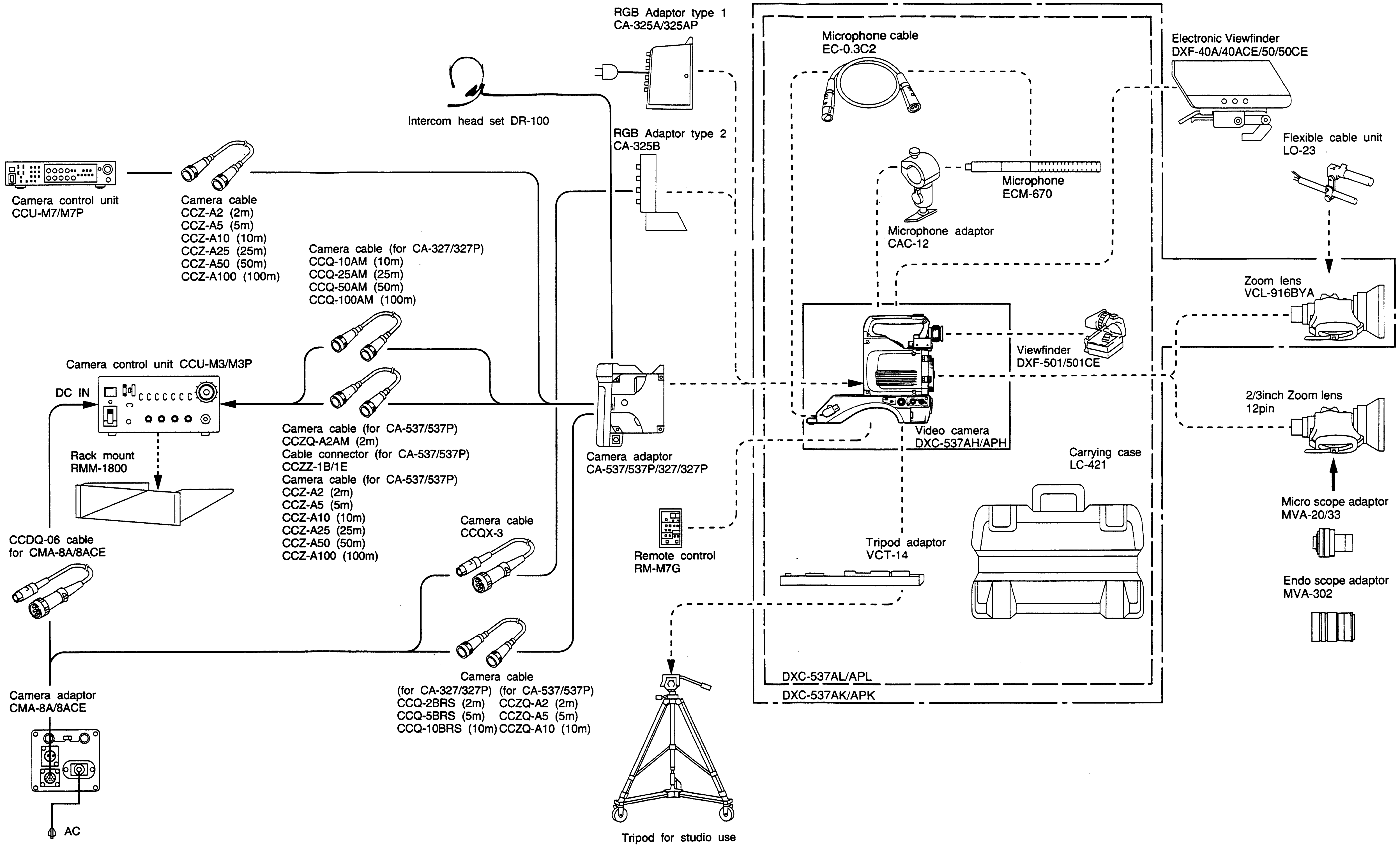
2-6. SYSTEM CONFIGURATION

Components of the DXC-537A/537AP series video camera kits and the configuration of the camera and its peripheral equipments (optional) are shown in the following charts.

2-6-1. Field Use

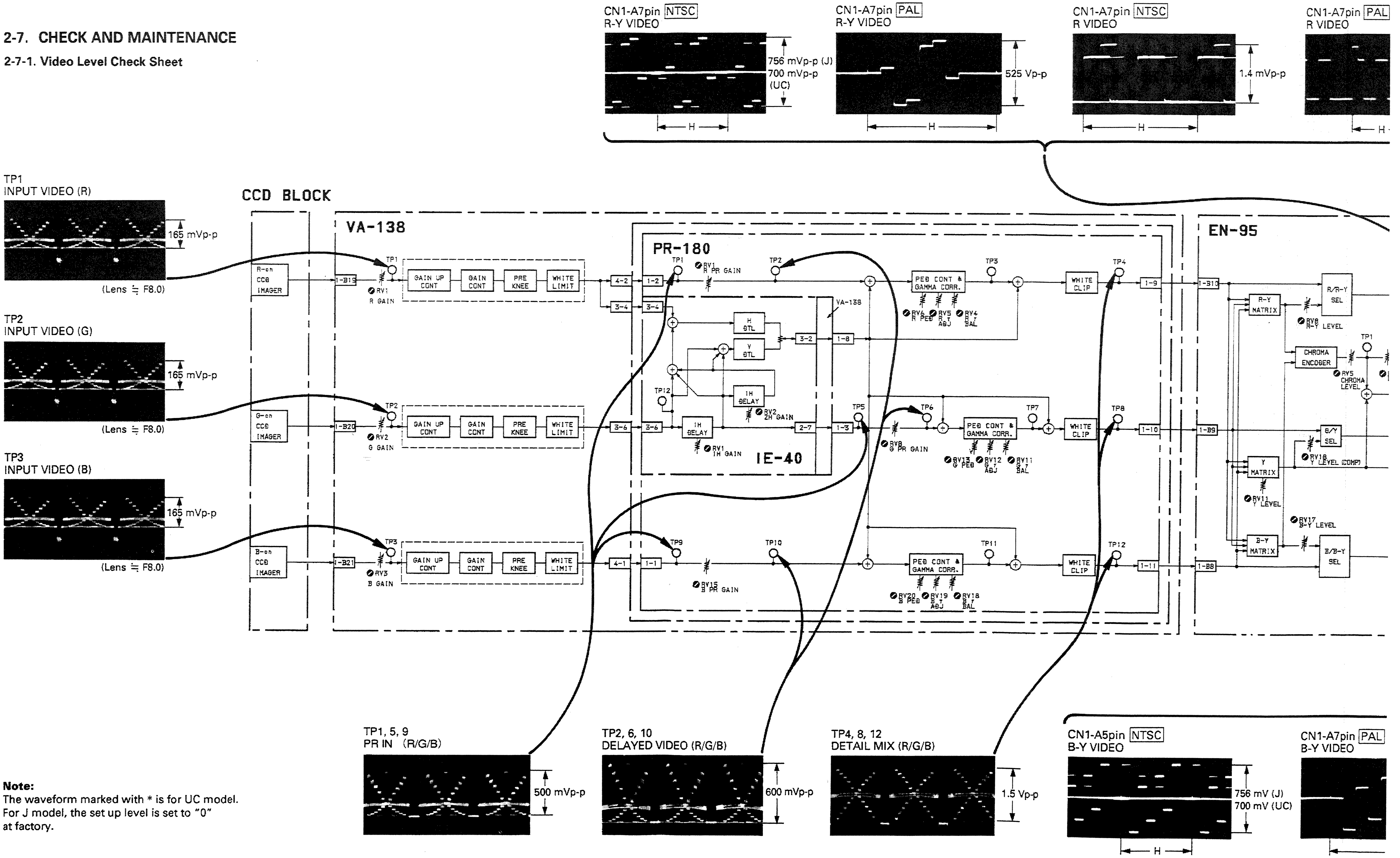

Battery Charger
BC-1WA/1WB
Battery pack
NP-1A/1B
Video cassette recorder
PVV-1
Hi-8 VTR
EVV-9000/9000P
Camera adaptor
CA-537/537P/327/327P
Portable VTR
VO-6800/6800PS
VO-8800/8800P
BVU-150/150P
Camera cable
(for CA-327/327P)
CCQ-2BRS (2m)
CCQ-5BRS (5m)
CCQ-10BRS (10m)
(for CA-537/537P)
CCZQ-A2 (2m)
CCZQ-A5 (5m)
CCZQ-A10 (10m)
Other VTR
AG-6400
(Panasonic)
Camera cable
CCQJ-2 (for CA-327/327P)
CCZJ-2 (for CA-537/537P)
Video cassette recoder
BVW-35/35P
Camera cable
CCZ-A2 (2m)
CCZ-A5 (5m)
CCZ-A10 (10m)
S VHS-VTR
AG-7400
(Panasonic)
Camera cable
(for CA-327/327P) (for CA-537/537P)
CCQ-2BRS (2m) CCZQ-A2 (2m)
CCQ-5BRS (5m) CCZQ-A5 (5m)
CCQ-10BRS (10m) CCZQ-A10 (10m)
Video cassette recoder
BVV-5
Camera adaptor
CA-511
Video cassette recoder
AG-7450/7450A
(Panasonic)
Camera adaptor
CA-512
Video cassette recoder
BR-S411/S410/S420C
(JVC)
Camera adaptor
CA-513
Video cassette recoder
EDW-75
Camera adaptor
CA-325ED
Microphone cable
EC-0.3C2
Microphone adaptor
CAC-12
Microphone
ECM-670
Zoom lens
VCL-916BYA
Viewfinder
DXF-501/501CE
2/3inch Zoom lens
12pin
Video camera
DXC-537AH/APH
Carrying case
LC-421
Tripod adaptor
VCT-14
DXC-537AL/APL
DXC-537AK/APK
Remote control
RM-M7G
Tripod for field use
Chest pad
CAC-4

2-6-2. Studio/OB Van Use

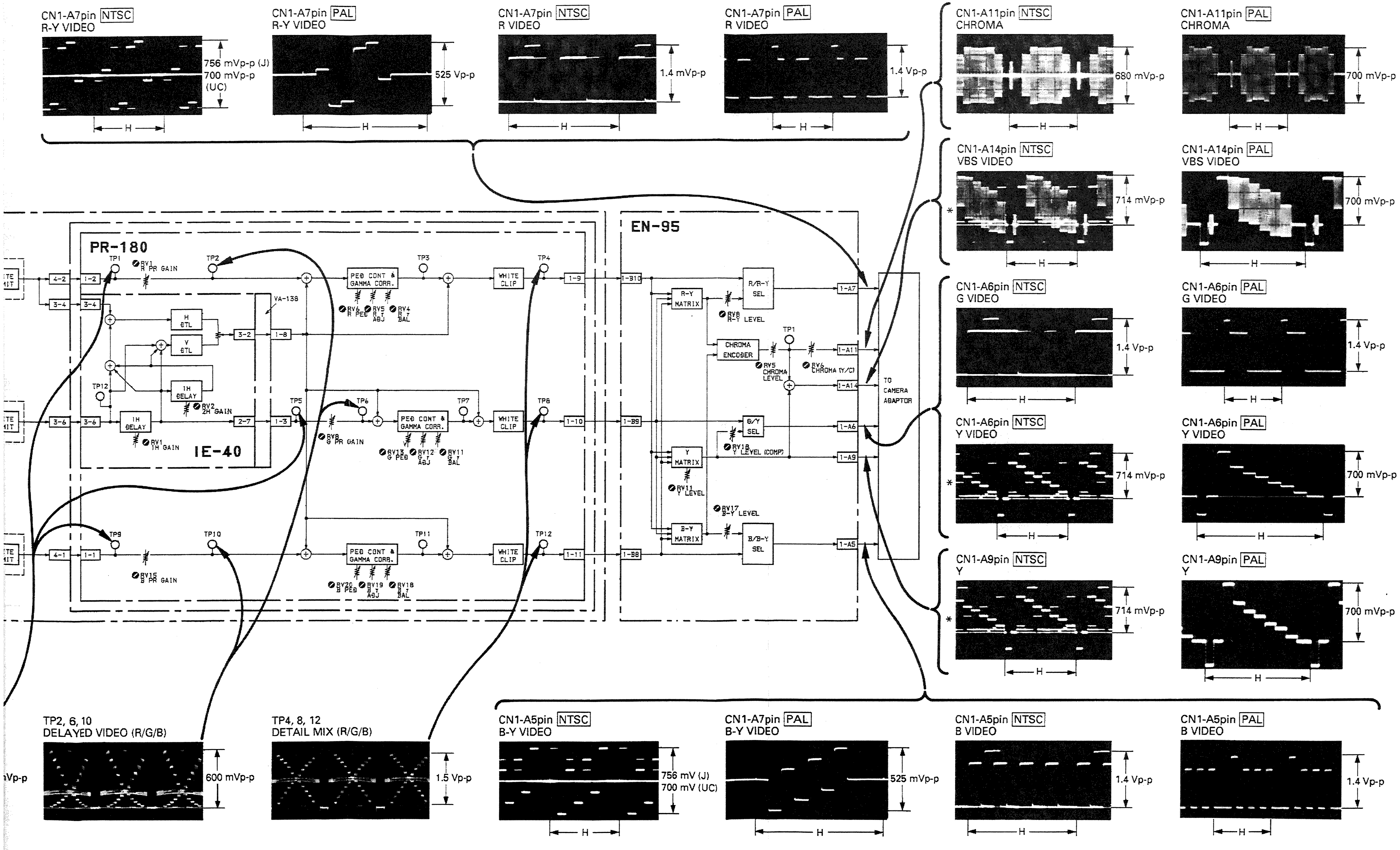

RGB Adaptor type 1
CA-325A/325AP
Intercom head set DR-100
RGB Adaptor type 2
CA-325B
Microphone cable
EC-0.3C2
Electronic Viewfinder
DXF-40A/40ACE/50/50CE
Flexible cable unit
LO-23
Microphone
ECM-670
Microphone adaptor
CAC-12
Camera control unit
CCU-M7/M7P
Camera cable
CCZ-A2 (2m)
CCZ-A5 (5m)
CCZ-A10 (10m)
CCZ-A25 (25m)
CCZ-A50 (50m)
CCZ-A100 (100m)
Camera cable (for CA-327/327P)
CCQ-10AM (10m)
CCQ-25AM (25m)
CCQ-50AM (50m)
CCQ-100AM (100m)
Zoom lens
VCL-916BYA
Camera control unit CCU-M3/M3P
DC IN
Viewfinder
DXF-501/501CE
2/3inch Zoom lens
12pin
Camera cable (for CA-537/537P)
CCZQ-A2AM (2m)
Cable connector (for CA-537/537P)
CCZZ-1B/1E
Camera cable (for CA-537/537P)
CCZ-A2 (2m)
CCZ-A5 (5m)
CCZ-A10 (10m)
CCZ-A25 (25m)
CCZ-A50 (50m)
CCZ-A100 (100m)
Rack mount
RMM-1800
Camera adaptor
CA-537/537P/327/327P
Video camera
DXC-537AH/APH
Carrying case
LC-421
Micro scope adaptor
MVA-20/33
Camera cable
CCQX-3
CCDQ-06 cable
for CMA-8A/8ACE
Remote control
RM-M7G
Tripod adaptor
VCT-14
Endo scope adaptor
MVA-302
Camera cable
(for CA-327/327P) (for CA-537/537P)
CCQ-2BRS (2m) CCZQ-A2 (2m)
CCQ-5BRS (5m) CCZQ-A5 (5m)
CCQ-10BRS (10m) CCZQ-A10 (10m)
DXC-537AL/APL
DXC-537AK/APK
Camera adaptor
CMA-8A/8ACE
AC
Tripod for studio use

2-7. CHECK AND MAINTENANCE

2-7-1. Video Level Check Sheet

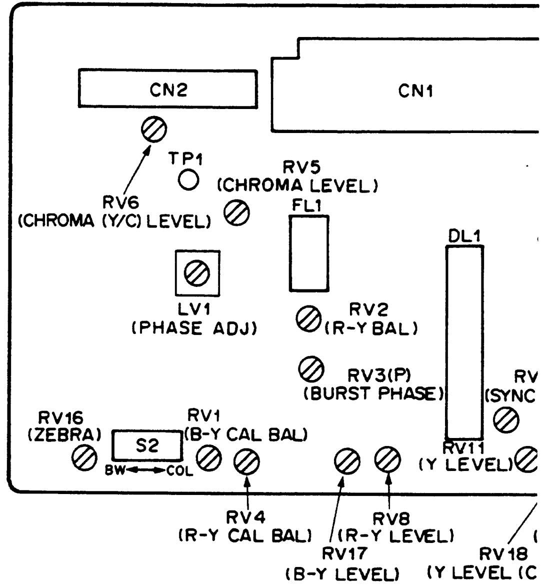

CN1-A7pin NTSC
R-Y VIDEO
756 mVp-p (J)
700 mVp-p
(UC)
H
CN1-A7pin PAL
R-Y VIDEO
525 Vp-p
H
CN1-A7pin NTSC
R VIDEO
1.4 mVp-p
H
CN1-A7pin PAL
R VIDEO
H
TP1
INPUT VIDEO (R)
165 mVp-p
(Lens ≒ F8.0)
TP2
INPUT VIDEO (G)
165 mVp-p
(Lens ≒ F8.0)
TP3
INPUT VIDEO (B)
165 mVp-p
(Lens ≒ F8.0)
CCD BLOCK
R-ch CCD IMAGER
G-ch CCD IMAGER
B-ch CCD IMAGER
VA-138
1-B19
1-B20
1-B21
TP1
RV1 R GAIN
TP2
RV2 G GAIN
TP3
RV3 B GAIN
GAIN UP CONT
GAIN CONT
PRE KNEE
WHITE LIMIT
4-2
3-4
3-6
4-1
PR-180
1-2
3-4
3-6
1-1
TP1
RV1 R PR GAIN
TP2
TP3
TP4
PED CONT & GAMMA CORR.
RV6 R PED
RV5 R γ ADJ
RV4 R γ BAL
WHITE CLIP
1-9
VA-138
H DTL
V DTL
1H DELAY
RV2 2H GAIN
TP12
1H DELAY
RV1 1H GAIN
IE-40
3-2
1-8
2-7
1-3
TP5
TP6
RV8 G PR GAIN
TP7
TP8
RV13 G PED
RV12 G γ ADJ
RV11 G γ BAL
1-10
TP9
TP10
TP11
TP12
RV15 B PR GAIN
RV20 B PED
RV19 B γ ADJ
RV18 B γ BAL
1-11
EN-95
1-B10
1-B9
1-B8
R-Y MATRIX
R/R-Y SEL
RV8 R-Y LEVEL
CHROMA ENCODER
TP1
RV5 CHROMA LEVEL
G/Y SEL
RV18 Y LEVEL (COMP)
Y MATRIX
RV11 Y LEVEL
RV17 B-Y LEVEL
B-Y MATRIX
B/B-Y SEL
TP1, 5, 9
PR IN (R/G/B)
500 mVp-p
TP2, 6, 10
DELAYED VIDEO (R/G/B)
600 mVp-p
TP4, 8, 12
DETAIL MIX (R/G/B)
1.5 Vp-p
CN1-A5pin NTSC
B-Y VIDEO
756 mV (J)
700 mV (UC)
H
CN1-A7pin PAL
B-Y VIDEO

Note:
The waveform marked with * is for UC model.
For J model, the set up level is set to "0"
at factory.

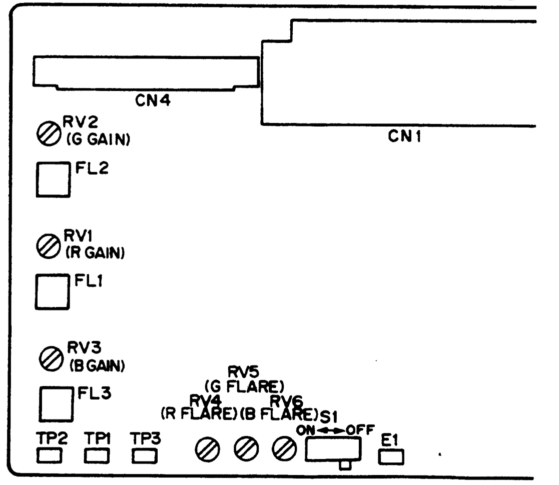

CN1-A7pin NTSC
R-Y VIDEO
756 mVp-p (J)
700 mVp-p
(UC)
H
CN1-A7pin PAL
R-Y VIDEO
525 Vp-p
H
CN1-A7pin NTSC
R VIDEO
1.4 mVp-p
H
CN1-A7pin PAL
R VIDEO
1.4 Vp-p
H
CN1-A11pin NTSC
CHROMA
680 mVp-p
H
CN1-A11pin PAL
CHROMA
700 mVp-p
H
CN1-A14pin NTSC
VBS VIDEO
714 mVp-p
*
H
CN1-A14pin PAL
VBS VIDEO
700 mVp-p
H
CN1-A6pin NTSC
G VIDEO
1.4 Vp-p
H
CN1-A6pin PAL
G VIDEO
1.4 Vp-p
H
CN1-A6pin NTSC
Y VIDEO
714 mVp-p
*
H
CN1-A6pin PAL
Y VIDEO
700 mVp-p
H
CN1-A9pin NTSC
Y
714 mVp-p
*
H
CN1-A9pin PAL
Y
700 mVp-p
H
PR-180
IE-40
EN-95
VA-139
TP1
RV1 R PR GAIN
TP2
PEG CONT & GAMMA CORR.
RV6 R PEG
RV5 R γ ADJ
RV4 R γ BAL
TP3
TP4
WHITE CLIP
H DTL
V DTL
1H DELAY
TP12
RV2 2H GAIN
1H DELAY
RV1 1H GAIN
TP5
TP6
RV8 G PR GAIN
TP7
TP8
RV13 G PEG
RV12 G γ ADJ
RV11 G γ BAL
TP9
TP10
TP11
RV15 B PR GAIN
RV20 B PEG
RV19 B γ ADJ
RV18 B γ BAL
4-2
1-2
3-4
3-2
1-8
3-6
2-7
1-3
4-1
1-1
1-9
1-10
1-11
1-B10
1-B9
1-B8
R-Y MATRIX
RV8 R-Y LEVEL
R/R-Y SEL
CHROMA ENCODER
RV5 CHROMA LEVEL
RV6 CHROMA (Y/C)
TP1
Y MATRIX
RV11 Y LEVEL
G/Y SEL
RV18 Y LEVEL (COMP)
RV17 B-Y LEVEL
B-Y MATRIX
B/B-Y SEL
1-A7
1-A11
1-A14
1-A6
1-A9
1-A5
TO CAMERA ADAPTOR
TP2, 6, 10
DELAYED VIDEO (R/G/B)
600 mVp-p
TP4, 8, 12
DETAIL MIX (R/G/B)
1.5 Vp-p
CN1-A5pin NTSC
B-Y VIDEO
756 mV (J)
700 mV (UC)
H
CN1-A7pin PAL
B-Y VIDEO
525 mVp-p
H
CN1-A5pin NTSC
B VIDEO
1.4 Vp-p
H
CN1-A5pin PAL
B VIDEO
1.4 Vp-p
H
Vp-p

	Item	Setting	Measuring point	Adjustment point	Spec.	Remark
Step 1	BARS Level	GAIN Switch → 0dB OUTPUT Switch → BARS	A6Pin/Extension Board (EN-95A)	⊘ RV15/EN-95A	1.4 ± 0.02 Vp-p	
			Waveform Monitor	⊘ RV13/EN-95A ⊘ RV14/EN-95A	The carrier leakage at gray portion is minimum	
Step 2	Carrier Balance		Vector Scope	⊘ RV1/EN-95A ⊘ RV4/EN-95A	White beam spot → Center	Be sure to use a vector scope compatible with setup level "0".
Step 3	Burst Level			⊘ RV7/EN-95A	Burst 75% Position	
Step 4	Color Vector			⊘ RV2, ⊘ RV5 ⊘ LV1/EN-95A	Beam spots of each color → inside the ⊞mark	
Step 5	SYNC Level		Waveform Monitor	⊘ RV10/EN-95A	40 ± 1 IRE (NTSC)/300 ± 7 mV (PAL)	
Step 6	Set Up Level			⊘ RV9/EN-95A	7.5 ± 0.5 IRE (NTSC)	
Step 7	Y Level			⊘ RV11/EN-95A	100 ± 1 IRE (NTSC)/700 ± 7 mV (PAL)	
Step 8	COMP Y Level		A6Pin/Extension Board (EN-95A)	⊘ RV18/EN-95A	Y Level : 714 mV (NTSC) : 700 mV (PAL)	
Step 9	COMP B-Y Level		A5Pin/Extension Board (EN-95A)	⊘ RV17/EN-95A	700 mV (NTSC) 525 mV (PAL)	
Step 10	COMP R-Y Level		A7Pin/Extension Board (EN-95A)	⊘ RV8/EN-95A		
Step 11	Y/C Y Level		A9Pin/Extension Board (EN-95A)	⊘ RV12/EN-95A	Y Level : 700 mV	VTR Switch/CA-537/537P → 3
Step 12	Y/C Chroma Level		A11Pin/Extension Board (EN-95A)	⊘ RV6/EN-95A	Burst Level : 290 mV (NTSC)/305 mV (PAL)	
Step 13	Reference Voltage		CN3 (11Pin)/VA-138	⊘ RV7/VA-138	+4.6 ± 0.05 V	
Step 14	G Video Level	Object : Gray Scale Chart GAIN Switch → 0dB WHITE BAL Switch → PRE SET	TP12/IE-40	⊘ RV2/VA-138	Video Level : 500 ± 5 mV	Lens Iris F ≒ 8.0
Step 15	B Video Level		TP9/PR-180	⊘ RV36/VA-138		
Step 16	R Video Level		TP1/PR-180	⊘ RV1/VA-138		
Step 17	1H Gain Level	Records the right half of the white window chart.	CH1 : TP12/IE-40 CH2 : TP2/IE-40	⊘ CV2/IE-40	The phase of CH1 is aligned to CH2.	Observe the trailing edge of the white level.
Step 18	G GAIN Level		CH1 : TP8/PR-180	⊘ RV8/PR-180	1400 ± 10 mV	
Step 19	R/B Pre Set White	GAIN Switch → 0dB Object : Gray Scale Chart Lens Iris F ≒ 8.0	CH1 : TP6/PR-180 CH2 : TP2/PR-180	⊘ RV1/PR-180	The waveform becomes flat.	Make the gain of CH1 and CH2 equal. Put the CH1 into the GAIN ADD mode and the CH2 into the INVERT mode.
			CH1 : TP6/PR-180 CH2 : TP10/PR-180	⊘ RV15/PR-180	The waveform becomes flat.	
Step 20	G Gamma Balance		TP8/PR-180	⊘ RV11/PR-180	White Level : 1.4 V	
Step 21	G Gamma Set		TP8/PR-180	⊘ RV12/PR-180	Crosspoint : 880 mV	
Step 22	R Gamma Balance		TP4/PR-180	⊘ RV4/PR-180	White Level : 1.4 V	
Step 23	B Gamma Balance		TP12/PR-180	⊘ RV18/PR-180		
Step 24	R/B Gamma Set		Vector Scope	⊘ RV5/PR-180 ⊘ RV19/PR-180	White beam spot → Center	Be sure to use a vector scope compatible with setup level "0".
Step 25	Pedestal	Lens Iris → Close GAIN Switch → 0dB	TP8/PR-180	⊘ RV13/PR-180	Level : 38 ± 5 mV (NTSC) : 45 ± 5 mV (PAL)	
			Vector Scope	⊘ RV7/PR-180 ⊘ RV22/PR-180		Be sure to use a vector scope compatible with setup level "0".
Step 26	Knee	GAIN Switch → 0dB Object : Gray Scale Chart	Waveform Monitor	⊘ RV24/PR-180	Level : 104 IRE (NTSC) : 728 mV (PAL)	Lens Iris F ≒ 8.0
				⊘ RV25/PR-180 ⊘ RV26/PR-180	Carrier leakage is minimized.	
				⊘ RV7/PR-180 ⊘ RV21/PR-180		
Step 27	G White Clip	Lens Iris → Open Object : Gray Scale Chart	Waveform Monitor	⊘ RV27/PR-180	Clip : 115 IRE (NTSC) : 805 mV (PAL)	
Step 28	R/B White Clip			⊘ RV28/PR-180 ⊘ RV31/PR-180	Carrier of white portion is minimized	

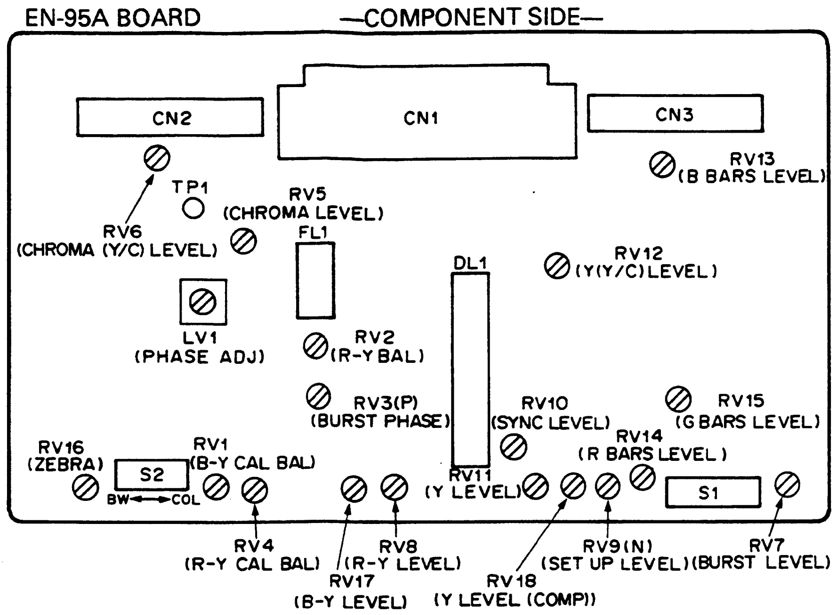
EN-95A BOARD —COMPONENT S

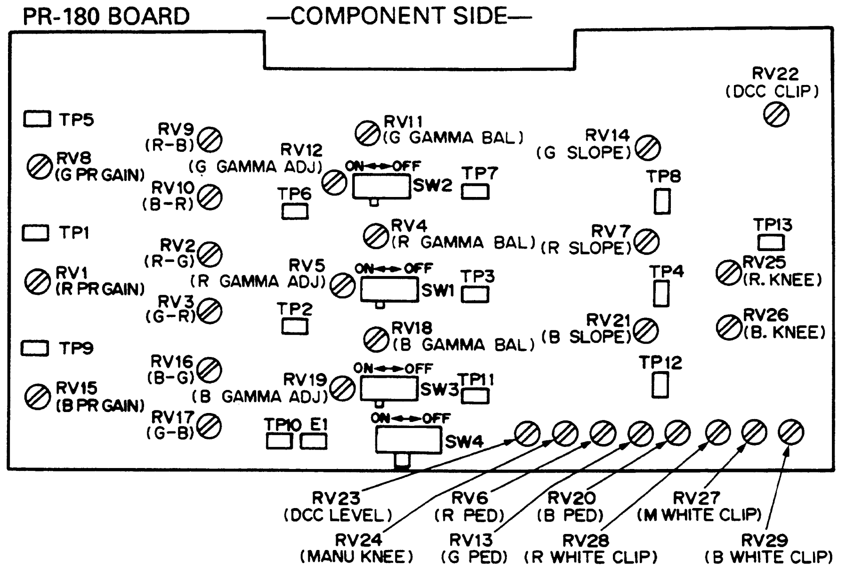


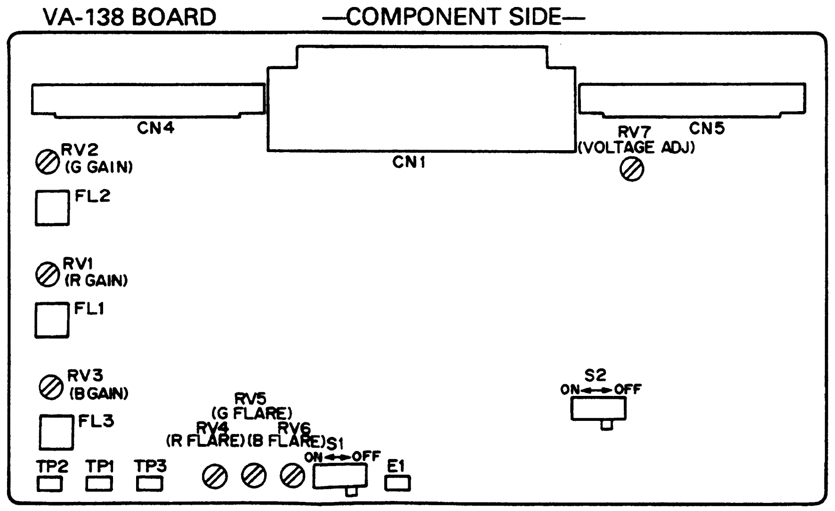
VA-138 BOARD —COMPONENT SIE

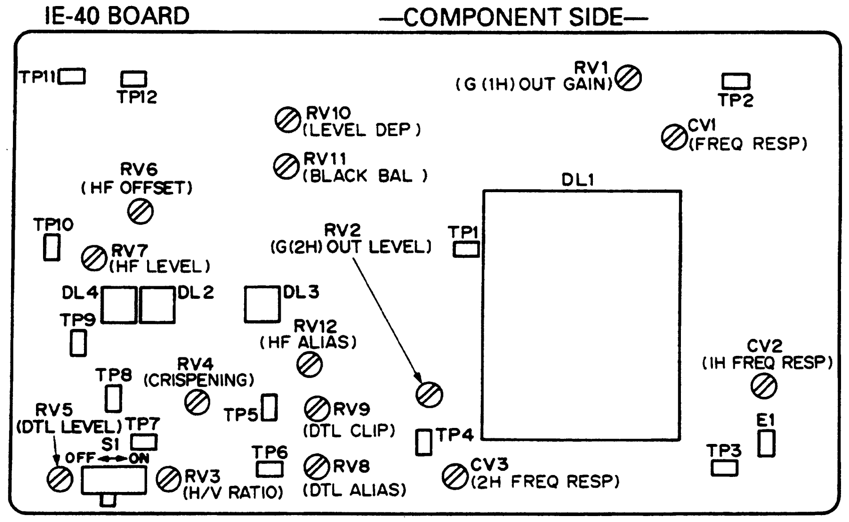


: point	Spec.	Remark
A	1.4 ± 0.02 Vp-p	
A A	The carrier leakage at gray portion is minimum	
	White beam spot → Center	Be sure to use a vector scope compatible with setup level "0".
	Burst 75% Position	
	Beam spots of each color → inside the ⊞ mark	
A	40 ± 1 IRE (NTSC)/300 ± 7 mV (PAL)	
	7.5 ± 0.5 IRE (NTSC)	
A	100 ± 1 IRE (NTSC)/700 ± 7 mV (PAL)	
A	Y Level : 714 mV (NTSC) : 700 mV (PAL)	
A	700 mV (NTSC)	
	525 mV (PAL)	
A	Y Level : 700 mV	VTR Switch/CA-537/537P → 3
	Burst Level : 290 mV (NTSC)/305 mV (PAL)	
	+4.6 ± 0.05 V	
 3	Video Level : 500 ± 5 mV	Lens Iris F ≒ 8.0
	The phase of CH1 is aligned to CH2.	Observe the trailing edge of the white level.
	1400 ± 10 mV	
	The waveform becomes flat.	Make the gain of CH1 and CH2 equal. Put the CH1 into the GAIN ADD mode and the CH2 into the INVERT mode.
)	The waveform becomes flat.	
)	White Level : 1.4 V	
)	Crosspoint : 880 mV	
)	White Level : 1.4 V	
)	White beam spot → Center	Be sure to use a vector scope compatible with setup level "0".
)	Level : 38 ± 5 mV (NTSC) : 45 ± 5 mV (PAL)	
)		Be sure to use a vector scope compatible with setup level "0".
)	Level : 104 IRE (NTSC) : 728 mV (PAL)	Lens Iris F ≒ 8.0
))	Carrier leakage is minimized.	
)		
)	Clip : 115 IRE (NTSC) : 805 mV (PAL)	
))	Carrier of white portion is minimized	


EN-95A BOARD
—COMPONENT SIDE—
CN2
CN1
CN3
RV13 (B BARS LEVEL)
TP1
RV5 (CHROMA LEVEL)
RV6 (CHROMA (Y/C) LEVEL)
FL1
DL1
RV12 (Y(Y/C) LEVEL)
LV1 (PHASE ADJ)
RV2 (R-Y BAL)
RV3(P) (BURST PHASE)
RV10 (SYNC LEVEL)
RV15 (G BARS LEVEL)
RV14 (R BARS LEVEL)
RV16 (ZEBRA)
S2
BW←→COL
RV1 (B-Y CAL BAL)
RV11 (Y LEVEL)
S1
RV4 (R-Y CAL BAL)
RV8 (R-Y LEVEL)
RV17 (B-Y LEVEL)
RV18 (Y LEVEL (COMP))
RV9(N) (SET UP LEVEL)
RV7 (BURST LEVEL)


PR-180 BOARD
—COMPONENT SIDE—
RV22 (DCC CLIP)
TP5
RV9 (R-B)
RV11 (G GAMMA BAL)
RV14 (G SLOPE)
RV8 (G PR GAIN)
RV12 (G GAMMA ADJ)
ON←→OFF
SW2
TP7
TP8
RV10 (B-R)
TP6
TP1
RV2 (R-G)
RV4 (R GAMMA BAL)
RV7 (R SLOPE)
TP13
RV1 (R PR GAIN)
RV5 (R GAMMA ADJ)
SW1
TP3
TP4
RV25 (R. KNEE)
RV3 (G-R)
TP2
RV18 (B GAMMA BAL)
RV21 (B SLOPE)
RV26 (B. KNEE)
TP9
RV16 (B-G)
RV19 (B GAMMA ADJ)
SW3
TP11
TP12
RV15 (B PR GAIN)
RV17 (G-B)
TP10 E1
SW4
RV23 (DCC LEVEL)
RV6 (R PED)
RV20 (B PED)
RV27 (M WHITE CLIP)
RV24 (MANU KNEE)
RV13 (G PED)
RV28 (R WHITE CLIP)
RV29 (B WHITE CLIP)


VA-138 BOARD
—COMPONENT SIDE—
CN4
CN1
RV7 (VOLTAGE ADJ)
CN5
RV2 (G GAIN)
FL2
RV1 (R GAIN)
FL1
RV3 (B GAIN)
FL3
RV5 (G FLARE)
RV4 (R FLARE)
RV6 (B FLARE)
S1
ON←→OFF
S2
ON←→OFF
TP2
TP1
TP3
E1

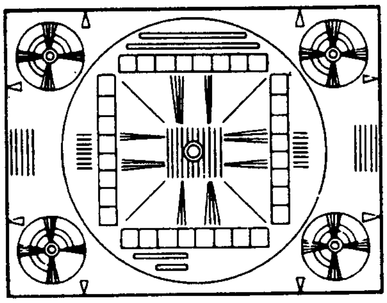

IE-40 BOARD
—COMPONENT SIDE—
TP11
TP12
RV1 (G (1H) OUT GAIN)
TP2
RV10 (LEVEL DEP)
CV1 (FREQ RESP)
RV11 (BLACK BAL)
RV6 (HF OFFSET)
DL1
TP10
RV7 (HF LEVEL)
RV2 (G(2H) OUT LEVEL)
TP1
DL4
DL2
DL3
TP9
RV12 (HF ALIAS)
CV2 (1H FREQ RESP)
TP8
RV4 (CRISPENING)
RV5 (DTL LEVEL)
TP7
TP5
RV9 (DTL CLIP)
TP4
E1
S1
OFF←→ON
RV3 (H/V RATIO)
TP6
RV8 (DTL ALIAS)
CV3 (2H FREQ RESP)
TP3

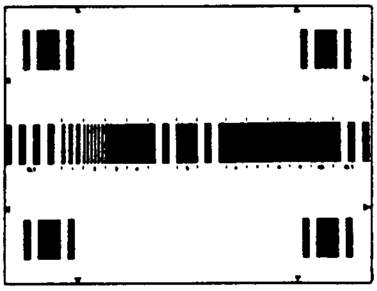
SECTION 3
ALIGNMENT

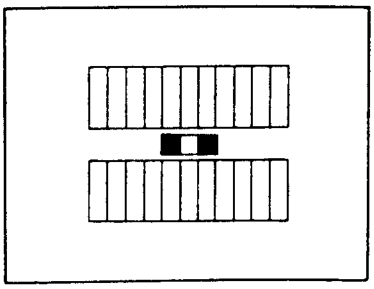
3-1. PREPARATION

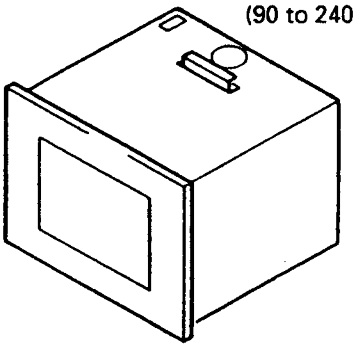
3-1-1. Equipment Required

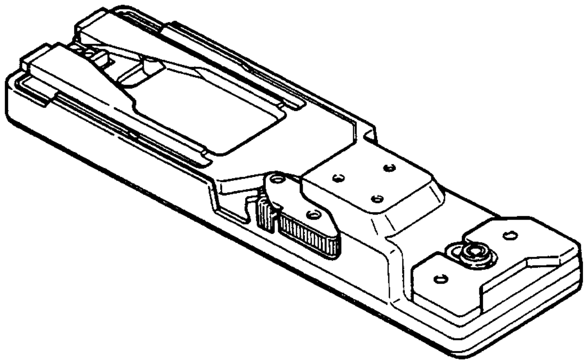
- Oscilloscope (more than 100 MHz)
- Waveform monitor
- Vectorscope
- Black and white monitor
  (Sony PVM-91CE/122CE or equivalent)
- Color Monitor (Sony PVM-1320 or equivalent)
- AC Adaptor (Sony CMA-8CE/8ACE)
- Frequency counter
- Camera adaptor (CA-537P)

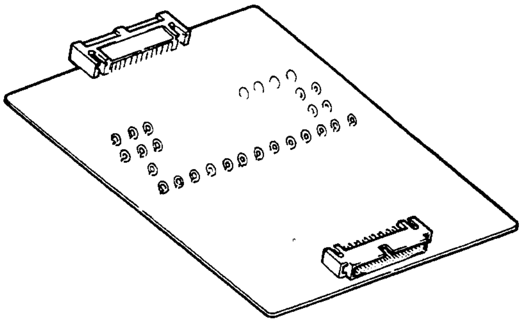
J-6026-100-A	Resolution chart
	

J-6026-110-A	Multiburst chart
	

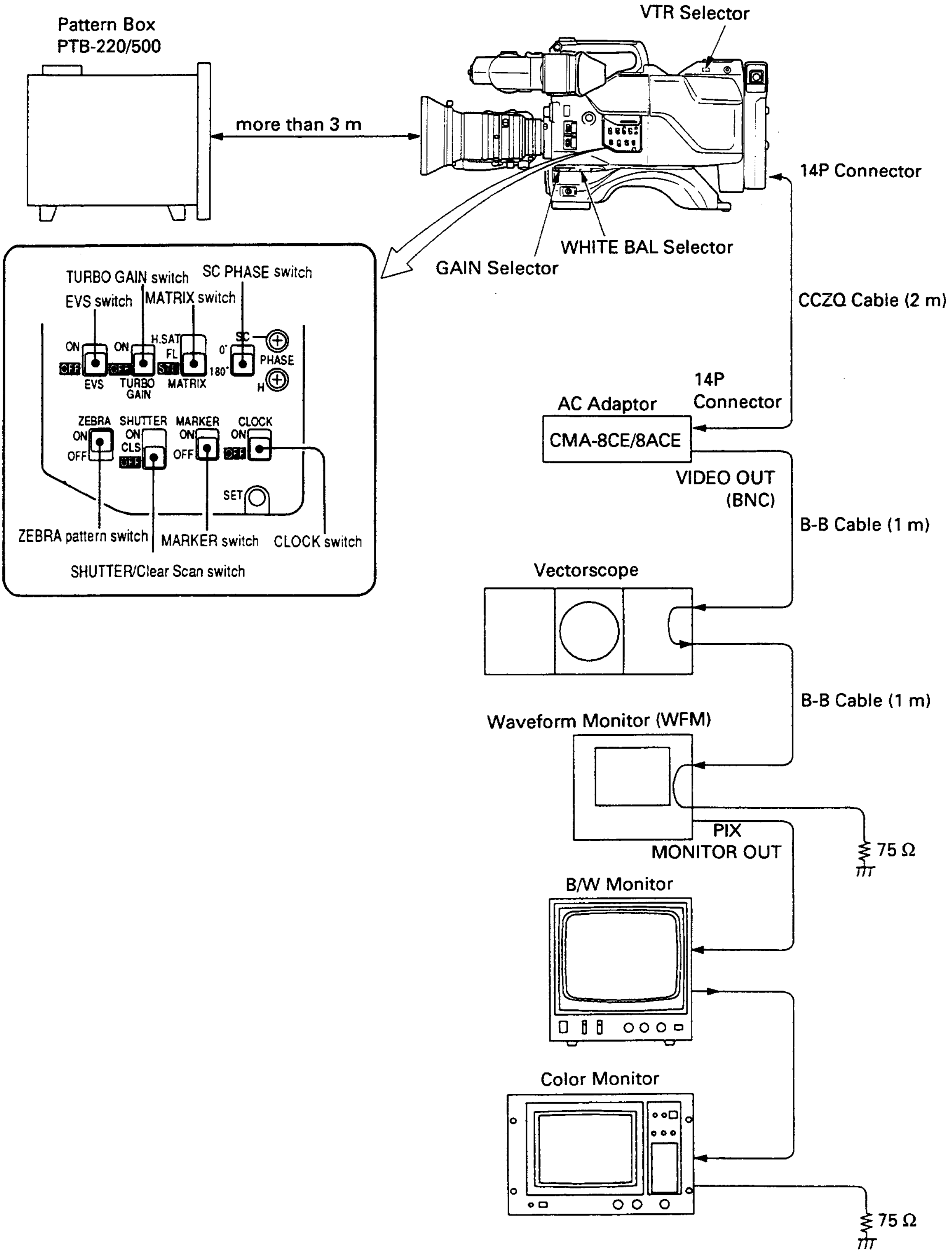
J-6026-130-A	Grayscale chart
	

J-6029-140-A	PTB-500 Pattern Box
• Light source for test chart (220 to 240 VAC: PTB-220) (90 to 240 VAC: PTB-500)  The PTB-220 (Pattern BOX) is also able to use.	

VCT-14 Tripod Adaptor


J-6309-200-A	Extension board EX-327
• For adjustment of SG-171, PR-180, IE-40, VA-138 and EN-95A boards 	

3-1-2. Connections and Initial Setting


Pattern Box
PTB-220/500
more than 3 m
VTR Selector
14P Connector
WHITE BAL Selector
GAIN Selector
CCZQ Cable (2 m)
TURBO GAIN switch
SC PHASE switch
EVS switch
MATRIX switch
ON
OFF
EVS
ON
OFF
TURBO GAIN
H.SAT
FL
STD
MATRIX
0°
180°
SC
PHASE
H
ZEBRA
ON
OFF
SHUTTER
ON
CLS
OFF
MARKER
ON
OFF
CLOCK
ON
OFF
SET
ZEBRA pattern switch
MARKER switch
CLOCK switch
SHUTTER/Clear Scan switch
14P Connector
AC Adaptor
CMA-8CE/8ACE
VIDEO OUT (BNC)
B-B Cable (1 m)
Vectorscope
B-B Cable (1 m)
Waveform Monitor (WFM)
PIX MONITOR OUT
75 Ω
B/W Monitor
Color Monitor
75 Ω

3-1-3. Initial Setting

Set the camera switches and controls as follows.

GAIN switch : 0 dB
OUTPUT switch : CAM (DCC OFF)
WHITE BAL switch : PRESET
FILTER knob : 1

VTR SELECT switch (CA-537P) : 1
IRIS (Lens) : Manual
ZOOM (Lens) : Manual

S1 (ZEBRA)/AT-78 board : OFF
S5 (SHUTTER)/AT-78 board : OFF
S6 (A. IRIS MODE)/AT-78 board : STD
S7 (ATW)/AT-78 board : OFF
S8 (TURBO GAIN)/AT-78 board : OFF
S9 (EVS)/AT-78 board : OFF
S10 (SC 0/180)/AT-78 board : OFF
S11 (ADJ)/AT-78 board : ON
S12 (MARKER)/AT-78 board : OFF
S13 (MATRIX)/AT-78 board : STD
S15 (CLOCK)/AT-78 board : OFF
S1 (DTL)/IE-40 board : OFF

Note: 1. During the adjustment, do not touch the following switch.
- S11 (ADJ)/AT-78 board

2. Confirm that the GAIN switch is set as follows.
HIGH : 18 dB
MID : 9 dB
LOW : 0 dB

3-1-4. Notes on Adjustment

When replacing the CCD block and the VA-138 board, be sure to perform the following adjustment before the adjustment of 3-5. Video Signal System. The adjustment procedure is described in section 3-9.

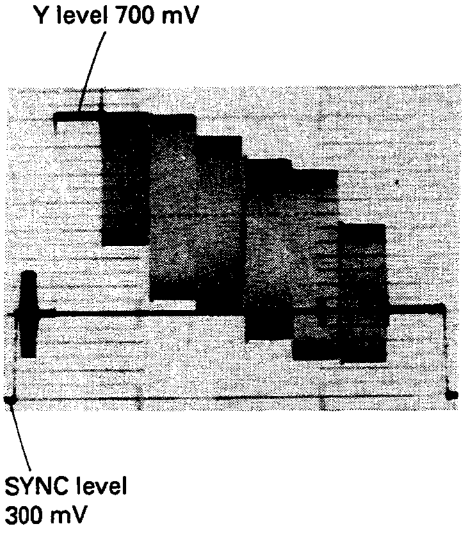
Adjustment	Replacement of CCD Block	Replacement of VA-138 Board
BLACK SET Adjustment	○	○
Shading Balance Adjustment		○
White Shading Adjustment	○	○
PRE KNEE Adjustment		○

3-2. BEFORE ADJUSTMENT

Note: 1. Before adjustment, connect the equipments referring to Item 3-1-2. Connections.
2. Before adjustment, set the POWER switch to ON and allow for 10 minute warm-up time.

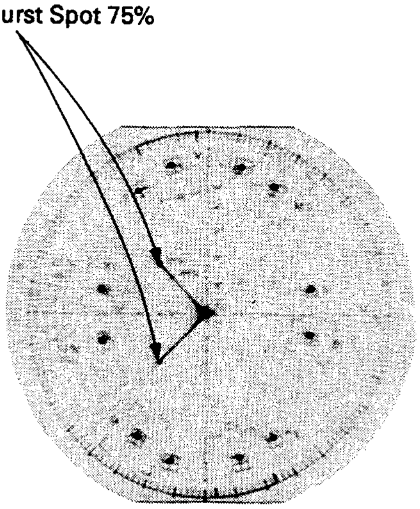
3-2-1. Color Bar Signal

Equipment : Vectorscope, Waveform monitor
Preparation : Set the OUTPUT switch on the side of the camera to BARS.
Specifications :



Chroma level

- Confirm that the beam spots of each color (R, YL, G, CY, G, CY, B, and MG) are inside the "⊞" mark.



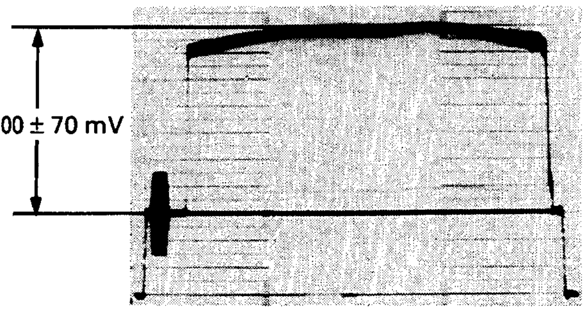
Note: Partial difference between scale and signal level is caused by photographic error.
: If the specifications are not met, carry out Item 3-4.
ENCODER SYSTEM (EN-95A board) adjustment.

3-2-2. Sensitivity Measurement

Object : White pattern
Light : 3200K, 2000 lux
(If the pattern box "PTB-220/500" is used, set the AUTO mode)
Preparation :

- Adjust the zoom control at "TELE" so that the white pattern frame matches the underscanned picture frame on the screen.
- Manually set the iris control to F8.
- Set the OUTPUT switch on the side of the camera to CAM.
- Set the WHITE BAL switch on the side of the camera to PRESET.

Equipment : Waveform monitor
Specifications : 700 ± 70 mV



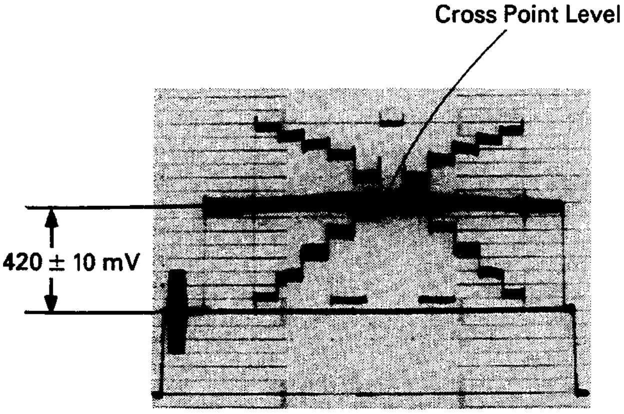
Note: If the specification is not met, perform all adjustments in Item 3-5. VIDEO SIGNAL SYSTEM.

3-2-3. Gamma and Gradation Measurement

Object : Grayscale chart
(Sony parts number J-6026-130-A)
Light : Pattern box PTB-220/500
Equipment : Waveform monitor
Preparation :

- Set the OUTPUT switch on the side of the camera to CAM.
- Set the WHITE BAL switch on the side of the camera to PRESET.
- Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.
- Adjust the iris control so that the white level of Grayscale chart is 700 mV on the waveform monitor.

Specifications : Confirm that the cross point level of the Grayscale chart is 420 ± 10 mV.



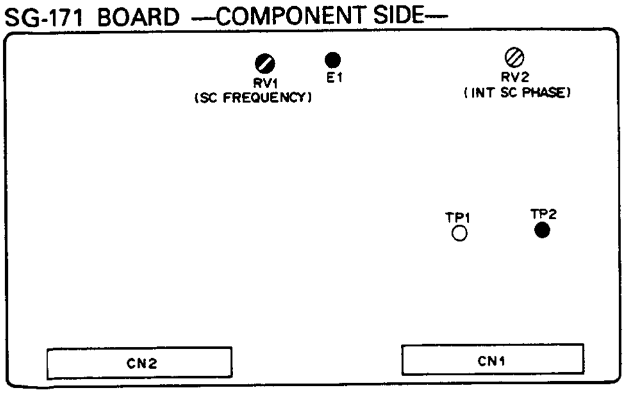
Note: Partial difference between signal level and scale is caused by a photographic error.
: If the specification is not met, carry out Item 3-5-13. through Item 3-5-20.

3-3. SYNC SIGNAL SYSTEM (SG-171 BOARD)

3-3-1. Sub Carrier Frequency Adjustment

Equipment	: Frequency counter
To be extended	: EN-95A board
Test point	: TP2 (GND: E1)/SG-171 board
Adjustment point	: ⊘RV1/SG-171 board
Specification	: 4,433,618 ± 10 Hz

SG-171 BOARD —COMPONENT SIDE—


RV1
(SC FREQUENCY)
E1
RV2
(INT SC PHASE)
TP1
TP2
CN2
CN1

3-3-2. INT SC Phase Adjustment

Note: Stated below is a procedure with the SC-H phase measuring equipment (Tektronix 1751). If any other equipment is used, perform adjustment at the following adjustment point by reading the instruction manual attached.

Equipment : SC-H phase measuring equipment
To be extended : EN-95A board
Preparation :

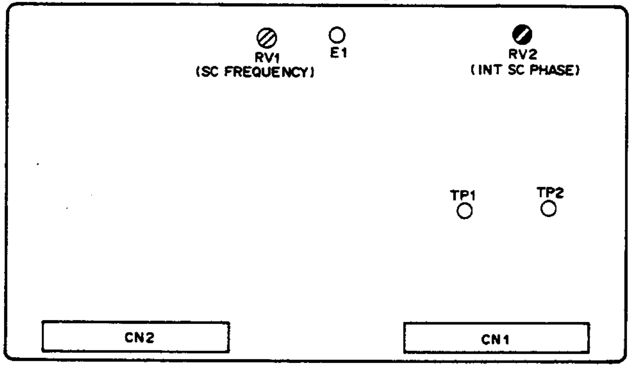
- Disconnect the vectorscope and connect the Tektronix 1751 instead.
- Put the Tektronix 1751 to SC-H mode.

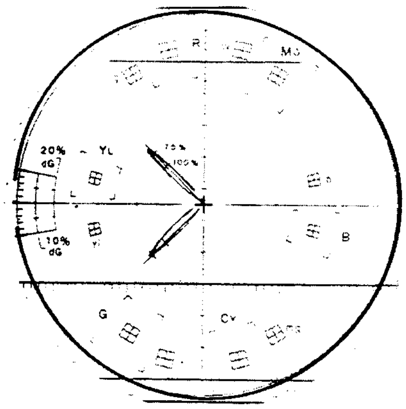
Test point : VIDEO OUT connector (side panel)
Adjustment point : ⊘RV2 (INT SC PHASE)/SG-171 board
Specification : See below.

Adjustment Procedures

1. Adjust the phase relationship between SC (burst) and H beam spot correctly with ⊘RV2 (INT SC PHASE).

SG-171 BOARD —COMPONENT SIDE—





Note: After the adjustment, disconnect Tektronix 1751 and connect the vectorscope.

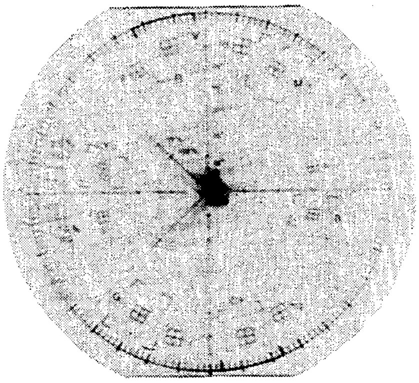
3-4. ENCODER SYSTEM (EN-95A BOARD)

3-4-1. Carrier Balance Adjustment

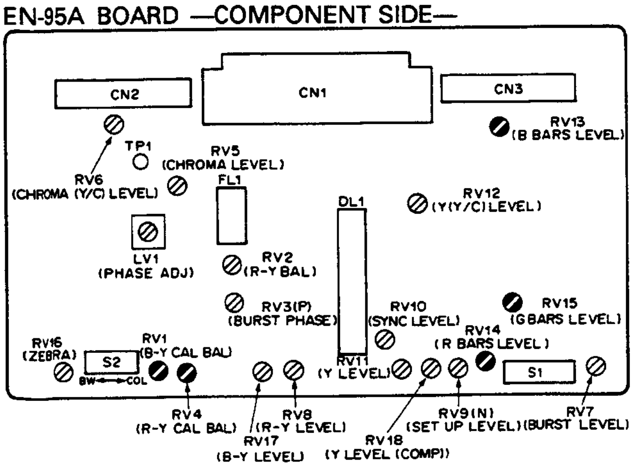
Equipment : Vectorscope (MAX GAIN)
To be extended : EN-95A board
Preparation :

- Set the OUTPUT switch on the side of the camera to BARS.

Adjustment : Adjust ⊘RV1 and ⊘RV4/EN-95A board so that the white beam spot is in the center of the vectorscope.



EN-95A BOARD —COMPONENT SIDE—


CN2
CN1
CN3
RV13
(B BARS LEVEL)
TP1
RV5
(CHROMA LEVEL)
RV6
(CHROMA (Y/C) LEVEL)
FL1
DL1
RV12
(Y(Y/C) LEVEL)
LV1
(PHASE ADJ)
RV2
(R-Y BAL)
RV3(P)
(BURST PHASE)
RV10
(SYNC LEVEL)
RV15
(G BARS LEVEL)
RV14
(R BARS LEVEL)
RV16
(ZEBRA)
RV1
(B-Y CAL BAL)
S2
BW←→COL
RV11
(Y LEVEL)
S1
RV4
(R-Y CAL BAL)
RV8
(R-Y LEVEL)
RV17
(B-Y LEVEL)
RV18
(Y LEVEL (COMP))
RV9(N)
(SET UP LEVEL)
RV7
(BURST LEVEL)

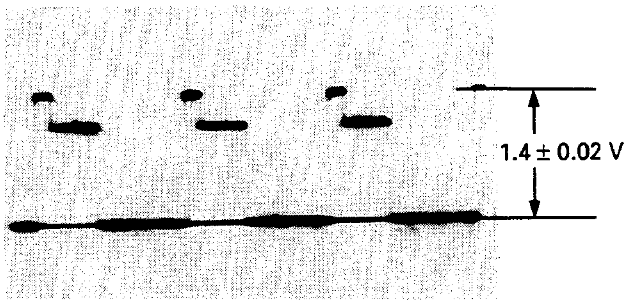
3-4-2. BARS Level Adjustment

Equipment : Oscilloscope, Waveform monitor
To be extended : EN-95A board
Preparation :

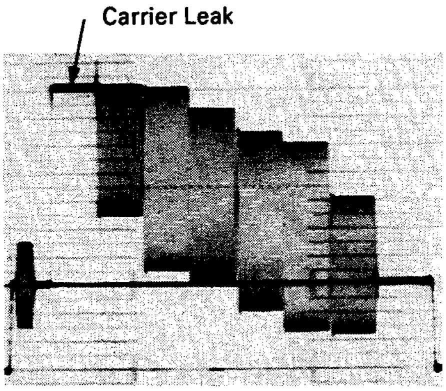
- OUTPUT switch (camera side panel) → BARS
- S1/IF-313 board (CA-537P) → RGB (upper side)

Trigger : HD (pin B18/extension board)
Adjustment :

1. Adjust ⊘RV15/EN-95A board so that the video level at pin A6 (GND: pin A8)/extension board is 1.4 ± 0.02 V.



2. Adjust ⊘RV13, ⊘RV14/EN-95A board so that the carrier leakage at white portion is minimum.


Carrier Leak

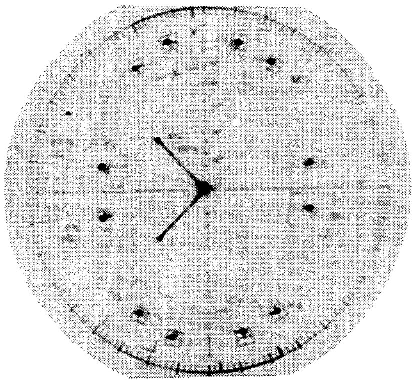
3-4-3. Color Vector Adjustment

Equipment : Vectorscope
To be extended : EN-95A board
Preparation :

- Set the GAIN switch on the vectorscope to 75%.
- Adjust "PHASE" control on the Vectorscope so that the burst spot is set to the 75% axis. Set the OUTPUT switch on the side of the camera to BARS.

Adjustment :

1. Adjust ⊘RV2, ⊘RV5 and ⊘LV1/EN-95A board so that the beam spot of each color are inside the "⊞" mark.
2. Adjust ⊘RV3 and ⊘RV7/EN-95A board so that the burst spots is positioned at the 75% scale.



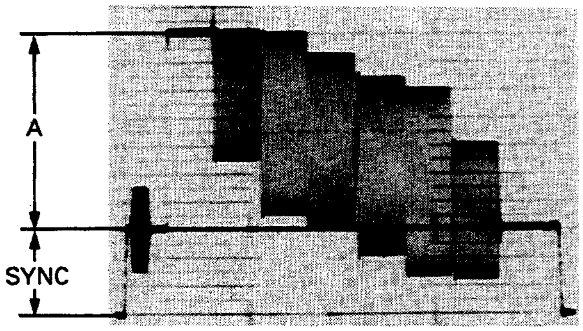
3-4-4. Y. SYNC Level Adjustment

Equipment : Waveform monitor
To be extended : EN-95A board
Preparation :

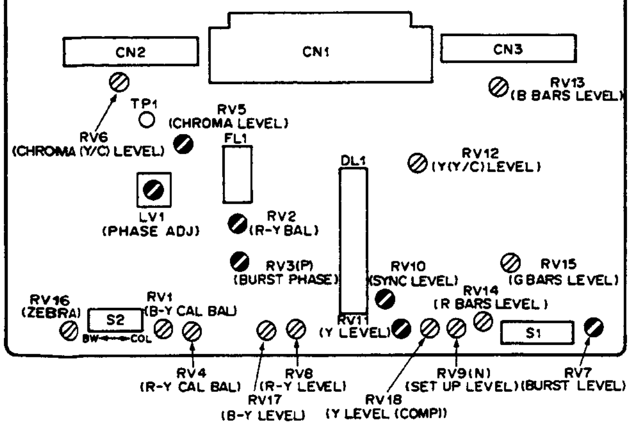
- Set the OUTPUT switch on the side of camera to BARS.

Adjustment :

1. Adjust ⊘RV11/EN-95A board so that the A level of the color bars signal is 700 ± 7 mV.
2. Adjust ⊘RV10/EN-95A board so that the SYNC level of the color bars signal is 300 ± 7 mV.



EN-95A (BOARD) —COMPONENT SIDE—

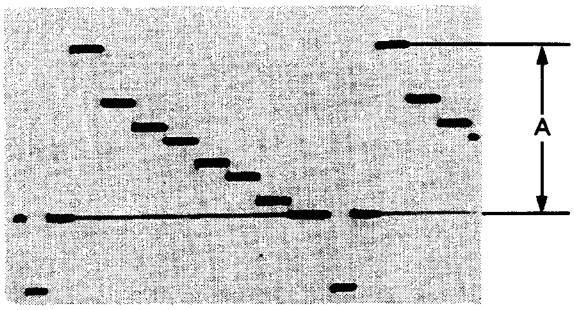

CN2
CN1
CN3
RV13 (B BARS LEVEL)
TP1
RV5 (CHROMA LEVEL)
RV6 (CHROMA (Y/C) LEVEL)
FL1
DL1
RV12 (Y(Y/C) LEVEL)
LV1 (PHASE ADJ)
RV2 (R-Y BAL)
RV3(P) (BURST PHASE)
RV10 (SYNC LEVEL)
RV15 (G BARS LEVEL)
RV14 (R BARS LEVEL)
RV16 (ZEBRA)
S2
BW COL
RV1 (B-Y CAL BAL)
RV11 (Y LEVEL)
S1
RV4 (R-Y CAL BAL)
RV8 (R-Y LEVEL)
RV17 (B-Y LEVEL)
RV9(N) (SET UP LEVEL)
RV18 (Y LEVEL (COMP))
RV7 (BURST LEVEL)

3-4-5. COMPONENT Y Level Adjustment

Equipment : Oscilloscope
Preparation :

- OUTPUT switch (camera side panel) → BARS
- S1/IF-313 board (CA-537P) → center position

To be extended : EN-95A board
Adjustment point : ⊘RV18/EN-95A board
Test point : pin A6 (GND: pin A8)/EN-95A board
Trigger : HD (pin B18/extension board)
Specification : A = 700 ± 10 mV

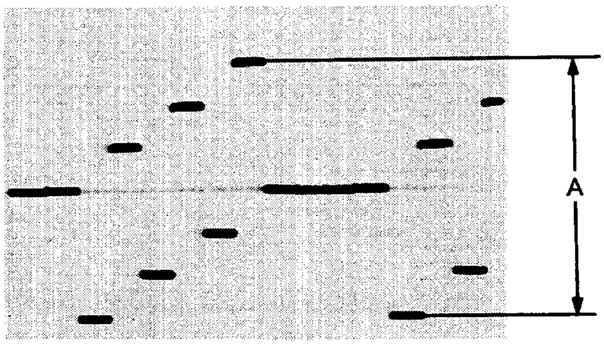


3-4-6. B-Y OUT Level Adjustment

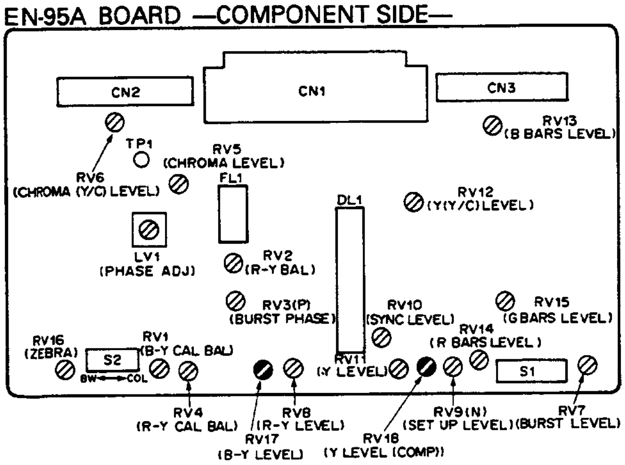
Equipment : Oscilloscope
To be extended : EN-95A board
Preparation :

- OUTPUT switch (camera side panel) → BARS

Test point : pin A5 (GND: pin A8)/extension board
Trigger : HD (pin B18/extension board)
Adjustment point : ⊘RV17/EN-95A board
Specifications : A = 525 ± 10 mV



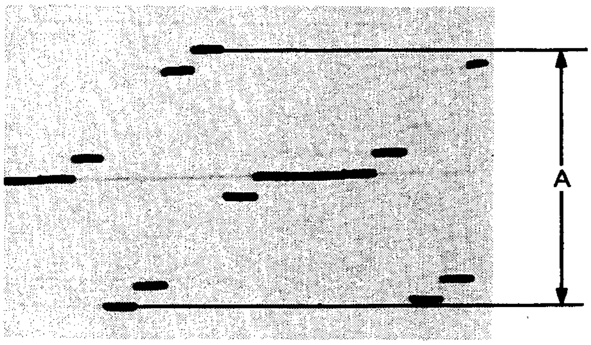
EN-95A BOARD —COMPONENT SIDE—


CN2
CN1
CN3
RV13
(B BARS LEVEL)
TP1
RV5
(CHROMA LEVEL)
RV6
(CHROMA (Y/C) LEVEL)
FL1
DL1
RV12
(Y(Y/C) LEVEL)
LV1
(PHASE ADJ)
RV2
(R-Y BAL)
RV3(P)
(BURST PHASE)
RV10
(SYNC LEVEL)
RV15
(G BARS LEVEL)
RV14
(R BARS LEVEL)
RV16
(ZEBRA)
S2
BW ↔ COL
RV1
(B-Y CAL BAL)
RV11
(Y LEVEL)
S1
RV4
(R-Y CAL BAL)
RV8
(R-Y LEVEL)
RV17
(B-Y LEVEL)
RV18
(Y LEVEL (COMP))
RV9(N)
(SET UP LEVEL)
RV7
(BURST LEVEL)

3-4-7. R-Y OUT Level Adjustment

Equipment : Oscilloscope
To be extended : EN-95A board
Preparation :
- OUTPUT switch (camera side panel) → BARS

Test point : pin A7(GND: pin A8)/extention board
Trigger : HD (pin B18/extension board)
Adjustment point : ●RV8/EN-95A board
Specifications : A = 525 ± 10 mV

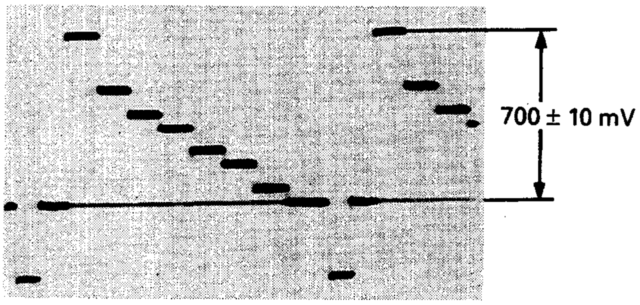


3-4-8. S-VHS VTR-Y Level Adjustment

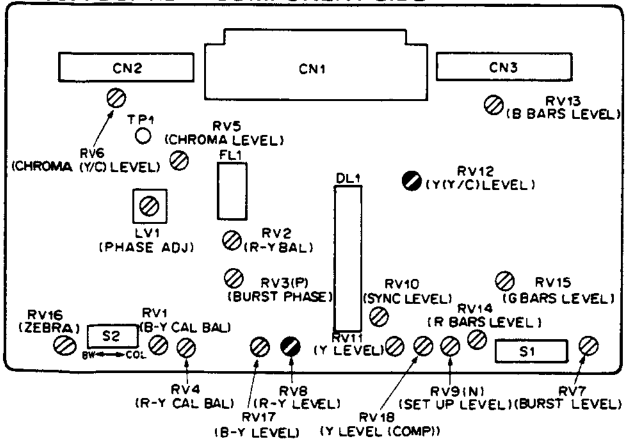
Note: Before this adjustment, carry out Item 3-4-4. Color Vector Adjustment.

Equipment : Oscilloscope
To be extended : EN-95A board
Preparation :
- Set the OUTPUT switch on the side of camera to BARS.

Test point : pin A9 (GND: pin A10)/extension board
Adjustment :
Adjust ●RV12/EN-95A board so that the white level of Y signal is 700 ± 10 mV.



EN-95A BOARD —COMPONENT SIDE—


CN2
CN1
CN3
RV13
(B BARS LEVEL)
TP1
RV5
(CHROMA LEVEL)
RV6
(CHROMA (Y/C) LEVEL)
FL1
DL1
RV12
(Y(Y/C)LEVEL)
LV1
(PHASE ADJ)
RV2
(R-Y BAL)
RV3(P)
(BURST PHASE)
RV10
(SYNC LEVEL)
RV15
(G BARS LEVEL)
RV14
(R BARS LEVEL)
RV16
(ZEBRA)
S2
BW COL
RV1
(B-Y CAL BAL)
RV11
(Y LEVEL)
S1
RV4
(R-Y CAL BAL)
RV8
(R-Y LEVEL)
RV9(N)
(SET UP LEVEL)
RV7
(BURST LEVEL)
RV17
(B-Y LEVEL)
RV18
(Y LEVEL (COMP))

3-4-9. S-VHS VTR-Chroma Level Adjustment

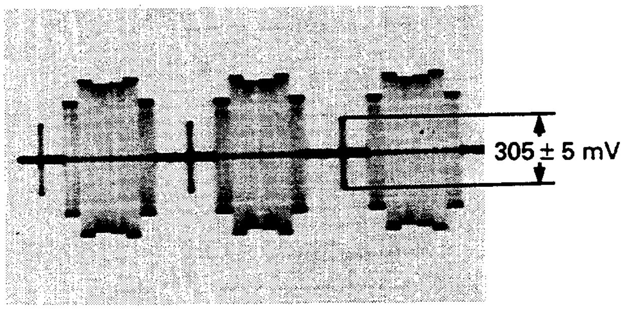
Note: Before this adjustment, carry out Item 3-4-4. Y SYNC Level Adjustment.

Equipment : Oscilloscope
To be extended : EN-95A board
Preparation :

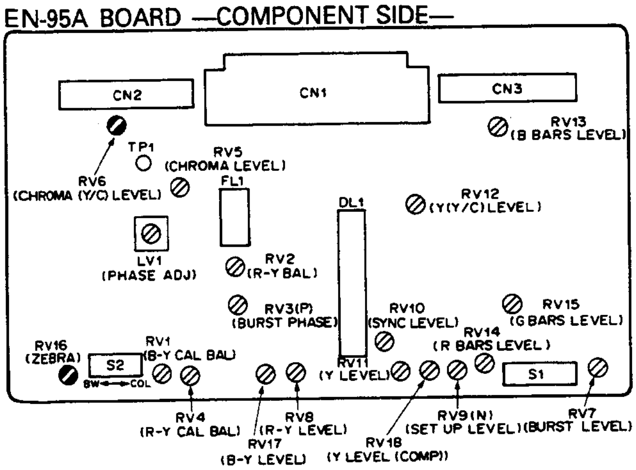
- Set the OUTPUT switch on the side of the camera to BARS.

Test point : pin A11 (GND: pin A12)/extension board
Adjustment :

Adjust ⊘RV6/EN-95A board so that the burst level in the chroma signal is 305 ± 5 mV.



EN-95A BOARD —COMPONENT SIDE—


CN2
CN1
CN3
RV13
(B BARS LEVEL)
TP1
RV5
(CHROMA LEVEL)
RV6
(CHROMA (Y/C) LEVEL)
FL1
DL1
RV12
(Y(Y/C) LEVEL)
LV1
(PHASE ADJ)
RV2
(R-Y BAL)
RV3(P)
(BURST PHASE)
RV10
(SYNC LEVEL)
RV15
(G BARS LEVEL)
RV14
(R BARS LEVEL)
RV16
(ZEBRA)
S2
BW←→COL
RV1
(B-Y CAL BAL)
RV11
(Y LEVEL)
S1
RV4
(R-Y CAL BAL)
RV8
(R-Y LEVEL)
RV17
(B-Y LEVEL)
RV9(N)
(SET UP LEVEL)
RV18
(Y LEVEL (COMP))
RV7
(BURST LEVEL)

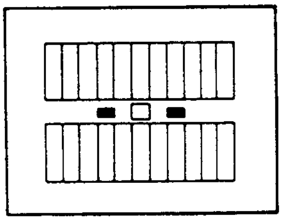
3-4-10. Zebra Adjustment

Object : Grayscale chart
Equipment : Viewfinder
Waveform monitor
To be extended : EN-95A board
Preparation :

- Set the OUTPUT switch on the side of the camera to CAM (DCC OFF).
- Set the S1 (ZEBRA ON/OFF) switch on the AT-78 board to ON.

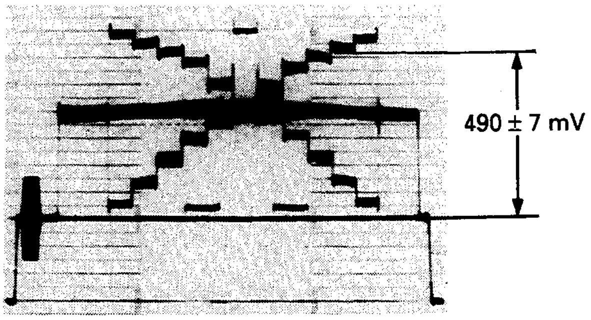
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.



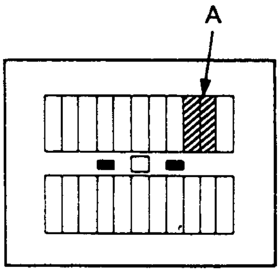
Monitor Screen

2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 490 ± 7 mV.



3. Adjust ⊘RV16/EN-95A board so that the zebra pattern appears on the portion A of the viewfinder screen.

Zebra Pattern



Monitor Screen

Note: After adjustment, set the S1/AT-78 board to OFF.

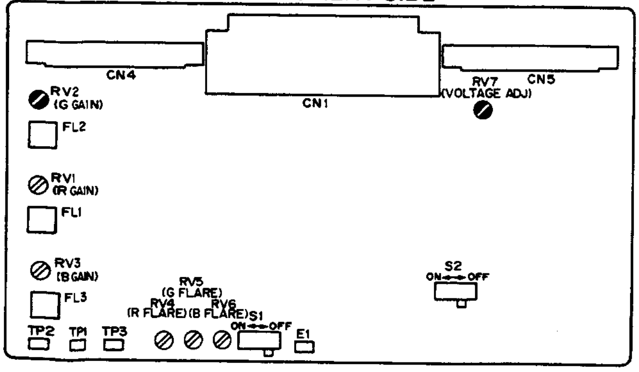
3-5. VIDEO SIGNAL SYSTEM (VA-138/PR-180 BOARD)

3-5-1. VOLTAGE Adjustment

Note: This adjustment influences operation of PR-180, IE-40 board.
Therefore, when this adjustment is carried out, all of following adjustments in VIDEO PROCESS SYSTEM and DETAIL SIGNAL SYSTEM must be confirmed. Perform adjustment when measured voltage is more than ±1% with respect to the specified voltage.

Equipment : Digital voltmeter
To be extended : VA-138 board
Test point : CN3-pin 11/VA-138 board
(GND: pin A1/extention board)
Adjustment point : ⊘RV7/VA-138 board
Specifications : +4.6 ± 0.05 Vdc

VA-138 BOARD —COMPONENT SIDE—



3-5-2. G ch Video Level Adjustment

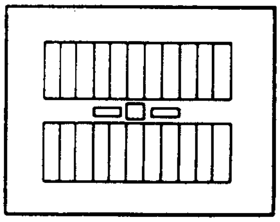
Note: After this adjustment, perform the Item 3-5-3. and the Item 3-5-4. adjustment.

Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Preparation :

- WHITE BAL switch (camera side panel) → PRESET
- OUTPUT switch (camera side panel) → CAM (DCC OFF)

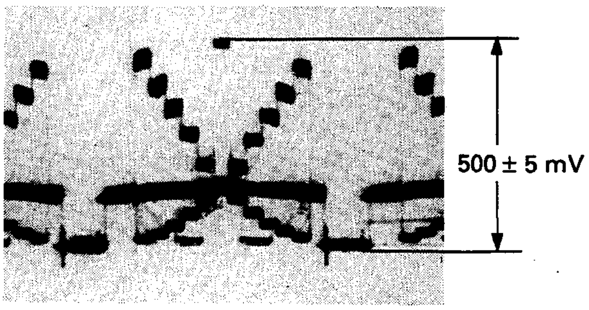
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control so that the chart frame matches the underscanned picture frame on the screen.



Monitor Screen

2. Manually set the iris control to F8.
3. Adjust ⊘RV2/VA-138 board so that the video level at TP12/IE-40 board is 500 ± 5 mV.



Note: Do not adjust the iris control until the Item 3-5-3. and the Item 3-5-4. are completed.

3-5-3. B ch Video Level Adjustment

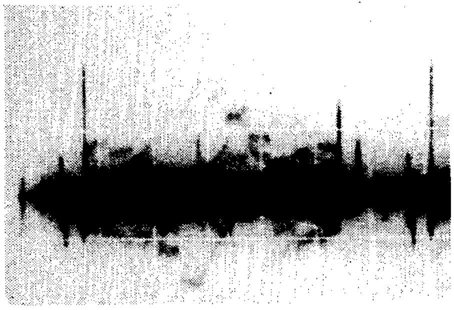
Note: Be sure carry out Item 3-5-2. G ch Video Level Adjustment before this adjustment.

Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Preparation :

- WHITE BAL switch (camera side panel) → PRESET
- OUTPUT switch (camera side panel) → CAM (DCC OFF)

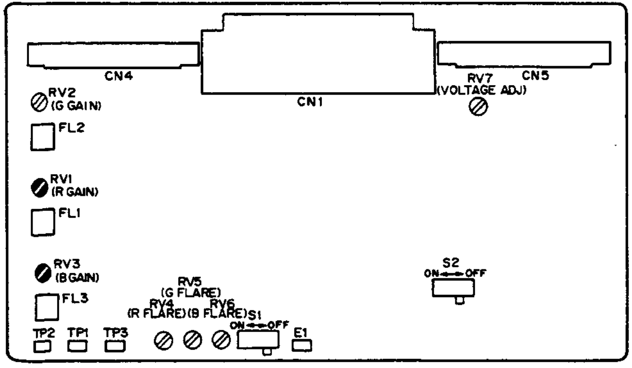
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control so that the chart frame matches the underscanned picture frame on the screen.
2. Connect CH-1 of oscilloscope to TP12 (GND: E1)/IE-40 board, and make sure that the video level is 500 ± 5 mV.
3. Connect CH-2 of oscilloscope to TP9 (GND: E1)/PR-180 board, and adjust ⊘RV3/VA-138 board so that the video level is about 500 mV.
4. Set the oscilloscope to ADD mode and CH-2 INVERT mode.
5. Readjust ⊘RV3/VA-138 board so that the waveform becomes flat.



Note: Do not adjust the iris control until the Item 3-5-4. are completed.

VA-138 BOARD —COMPONENT SIDE—



3-5-4. R ch Video Level Adjustment

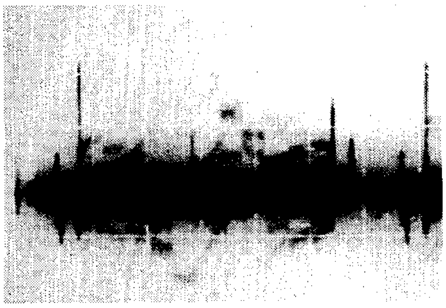
Note: Be sure to carry out Item 3-5-2. G ch Level Adjustment before this adjustment.

Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Preparation :

- Set the OUTPUT switch on the side of the camera to CAM.
- Set the WHITE BAL switch on the side of the camera to PRESET.

Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control so that the chart frame matches the underscanned picture frame on the screen.
2. Connect CH-1 of oscilloscope to TP12 (GND: E1)/IE-40 board, and make sure that the video level is 500 ± 5 mV.
3. Connect CH-2 of oscilloscope to TP1 (GND: E1)/PR-180 board, and adjust ⊘RV1/VA-138 board so that the video level is about 500 mV.
4. Set the oscilloscope to ADD mode and CH-2 INVERT mode.
5. Readjust ⊘RV1/VA-138 board so that the waveform becomes flat.



3-5-5. Pedestal Adjustment

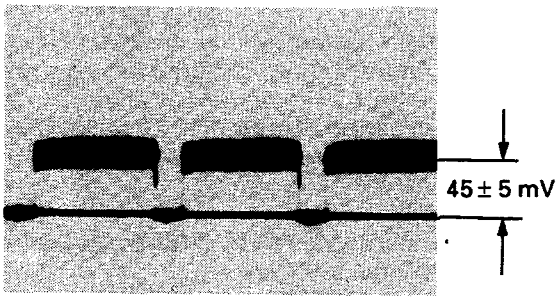
Lens iris : Close "C"
Equipment : Oscilloscope, Vectorscope
(MAX GAIN)
Preparation :

- Set the S11 (ADJ) switch on the AT-78 board to ON.

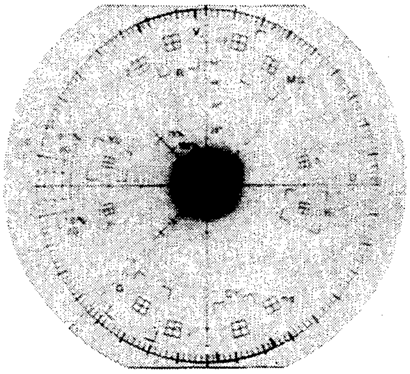
To be extended : VA-138 board
Test point : TP8 (GND: E1)/PR-180 board
Adjustment :

- Set the GAIN switch on the side of the camera to 0 dB.

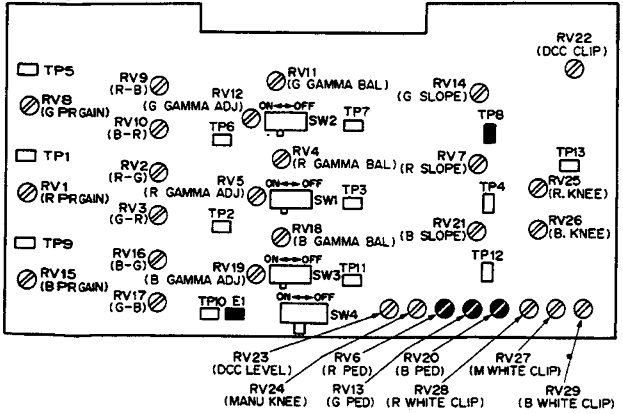
1. Adjust ●RV13/PR-180 board so that the pedestal level is 45 ± 5 mV.



2. Adjust ●RV6 and ●RV20/PR-180 board so that the beam spot is in the center of the vectorscope.



PR-180 BOARD —COMPONENT SIDE—


RV22
(DCC CLIP)
TP5
RV9
(R-B)
RV11
(G GAMMA BAL)
RV14
(G SLOPE)
RV8
(G PR GAIN)
RV12
(G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10
(B-R)
TP6
TP1
RV4
(R GAMMA BAL)
RV7
(R SLOPE)
TP13
RV2
(R-G)
RV1
(R PR GAIN)
RV5
(R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV25
(R. KNEE)
RV3
(G-R)
TP2
RV18
(B GAMMA BAL)
RV21
(B SLOPE)
RV26
(B. KNEE)
TP9
RV16
(B-G)
ON↔OFF
TP12
RV15
(B PR GAIN)
RV19
(B GAMMA ADJ)
SW3
TP11
RV17
(G-B)
TP10 E1
ON↔OFF
SW4
RV23
(DCC LEVEL)
RV6
(R PED)
RV20
(B PED)
RV27
(M WHITE CLIP)
RV24
(MANU KNEE)
RV13
(G PED)
RV28
(R WHITE CLIP)
RV29
(B WHITE CLIP)

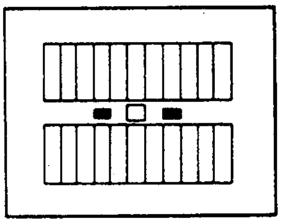
3-5-6. 1H GAIN Adjustment

Object : Grayscale chart
Equipment : Oscilloscope, Waveform monitor
To be extended : VA-138 board
Preparation :

- Set the OUTPUT switch on the side of the camera to BARS.
- Set the WHITE BAL switch on the side of the camera to PRESET.

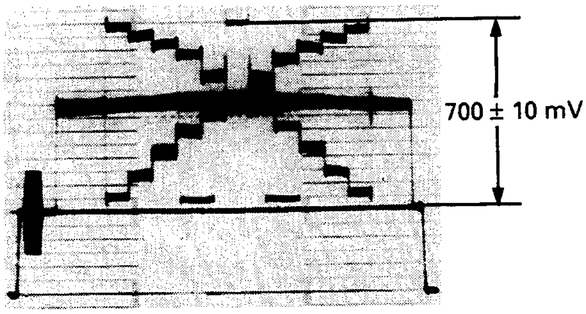
Test point : CH1: TP12(GND: E1)/IE-40 board
CH2: TP2/IE-40 board
Trigger : pin A5/extension board
Adjustment point : ⊘RV1/IE-40 board
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.

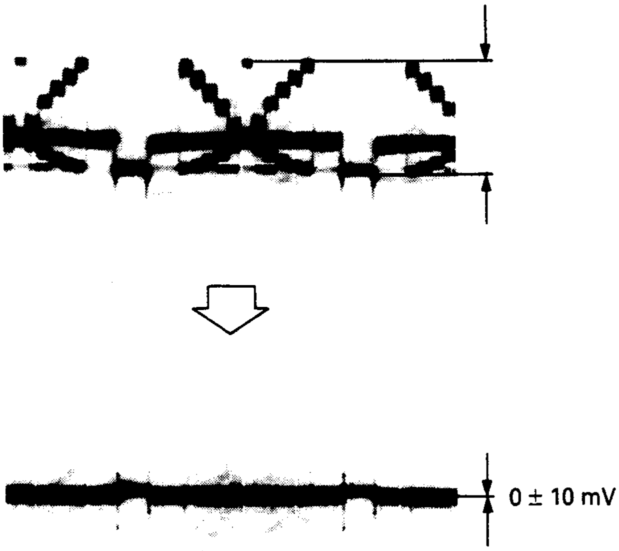


Monitor Screen

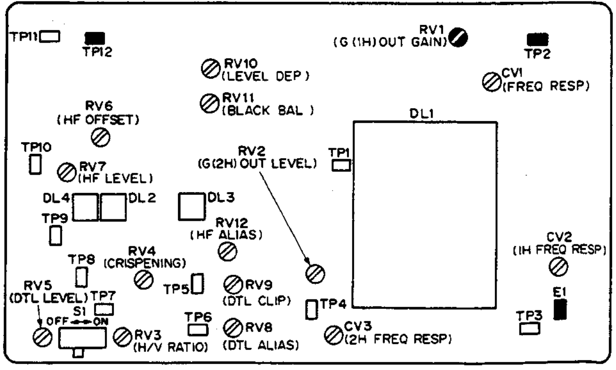
2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 700 ± 10 mV.



3. Set the oscilloscope to ADD mode and CH-2 INVERT mode.
4. Connect CH-1 and CH-2 of oscilloscope to TP12 (GND: E1)/IE-40 board.
   Adjust CH2-VAR control on the oscilloscope so that the waveform becomes flat for gain correction.
5. Connect CH-1 of oscilloscope to TP12 (GND: E1)/IE-40 board and CH-2 to TP2/IE-40 board (GND: pin A1/ extension board).
6. Adjust ⊘RV1/IE-40 board so that the waveform becomes flat.



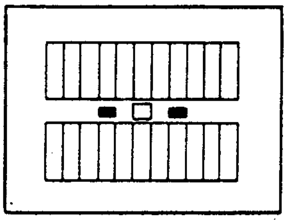
IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV6
(HF OFFSET)
RV11
(BLACK BAL)
DL1
TP10
RV2
(G(2H) OUT LEVEL)
TP1
RV7
(HF LEVEL)
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
RV4
TP8
(CRISPENING)
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
E1
S1
OFF
ON
TP4
TP6
RV8
TP3
RV3
(H/V RATIO)
(DTL ALIAS)
CV3
(2H FREQ RESP)

3-5-7. 2H GAIN Adjustment

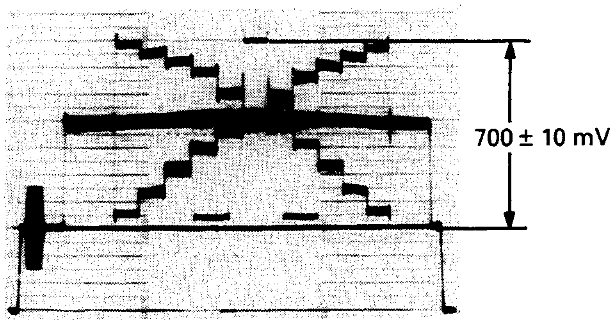
Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Test point : CH1: TP12 (GND: E1)/IE-40 board
CH2: TP4/IE-40 board (GND: pin A1/ extension board)
Trigger : pin A5/extension board
Adjustment point : ⊘RV2/IE-40 board
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.

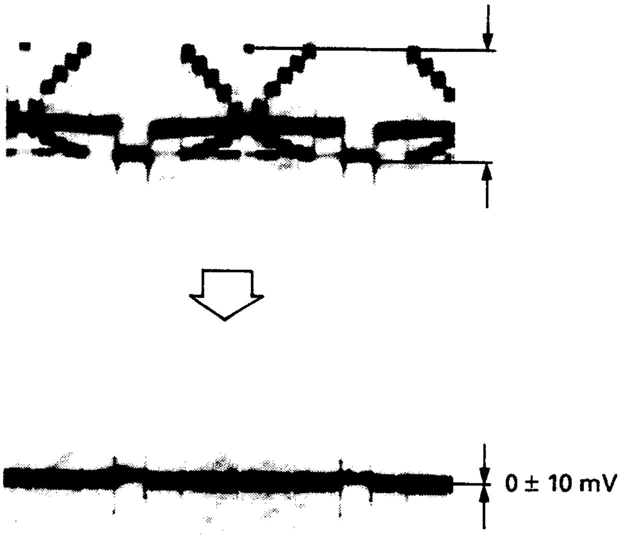


Monitor Screen

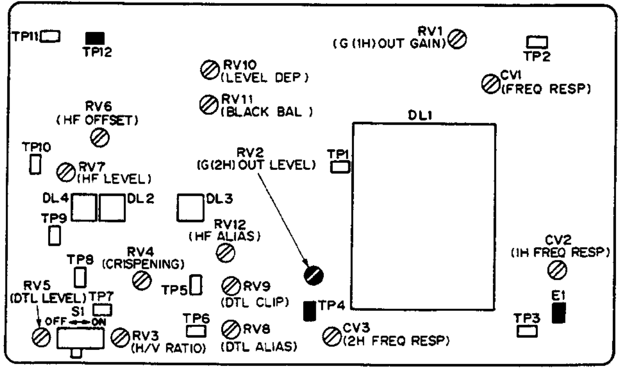
2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 700 ± 10 mV.



3. Set the oscilloscope to ADD mode and CH-2 INVERT mode.
4. Connect CH-1 and CH-2 of oscilloscope to TP12 (GND: E1)/IE-40 board.
   Adjust CH2-VAR control on the oscilloscope so that the waveform becomes flat for gain correction.
5. Connect CH-1 of oscilloscope to TP12 (GND: E1)/IE-40 board and CH-2 to TP4/IE-40 board (GND: pin A1/ extension board).
6. Adjust ⊘RV2/IE-40 board so that the waveform becomes flat.



IE-40 BOARD —COMPONENT SIDE—

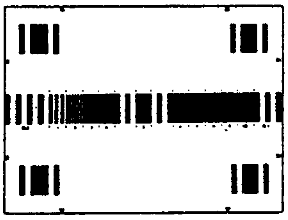

TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV11
(BLACK BAL)
RV6
(HF OFFSET)
DL1
TP10
RV2
(G (2H) OUT LEVEL)
TP1
RV7
(HF LEVEL)
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
RV4
(CRISPENING)
TP8
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
TP4
E1
S1
OFF
ON
TP6
TP3
RV3
(H/V RATIO)
RV8
(DTL ALIAS)
CV3
(2H FREQ RESP)

3-5-8. 1H OUT Frequency Responce Adjustment

Note: Perform this adjustment only when replacing a DL1 delay line on the IE-40 board.

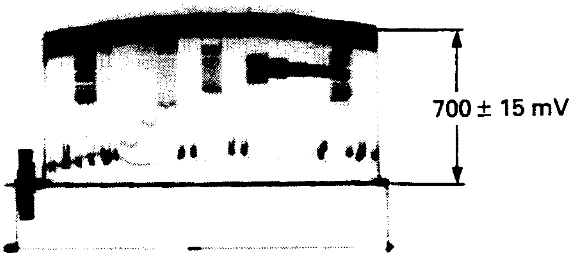
Object	: Burst chart
Equipment	: Oscilloscope, Waveform monitor
To be extended	: VA-138 board
Adjustment	:

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.

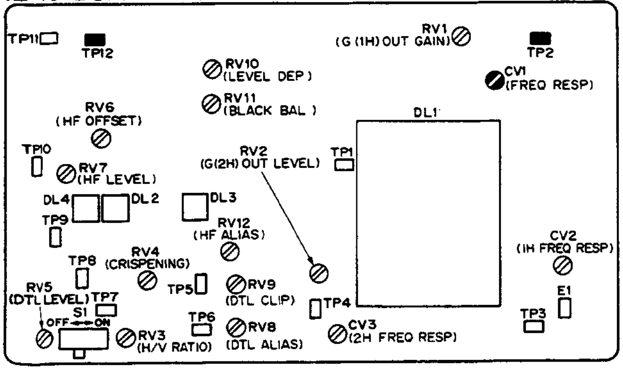


Monitor Screen

2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 700 ± 15 mV.



IE-40 BOARD —COMPONENT SIDE—

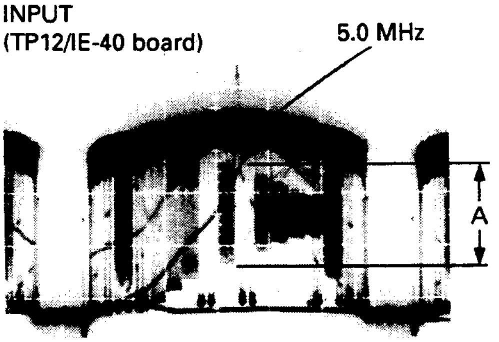

TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV11
(BLACK BAL)
RV6
(HF OFFSET)
DL1
TP10
RV2
(G(2H) OUT LEVEL)
TP1
RV7
(HF LEVEL)
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
TP8
RV4
(CRISPENING)
TP5
RV9
(DTL CLIP)
E1
RV5
(DTL LEVEL)
TP7
S1
OFF ←→ ON
TP4
TP3
TP6
RV8
(DTL ALIAS)
RV3
(H/V RATIO)
CV3
(2H FREQ RESP)

3. Adjust ⊘CV1/IE-40 board so that the input level and output level at 5.0 MHz portion are almost equal as shown below.

IE-40 board (GND: E1/PR-180 board)

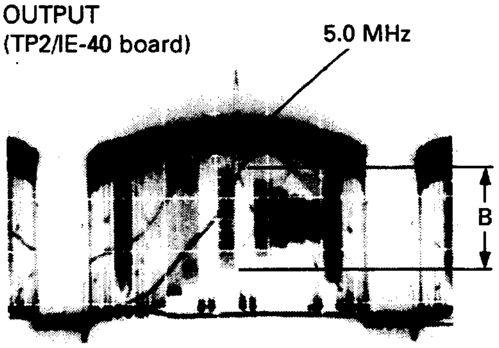
Test point (Input signal)	Test point (Output signal)	Adjusting point	Specification (5.0 MHz)
TP12/IE-40 board	TP2/IE-40 board	⊘CV1	A ≒ B

INPUT
(TP12/IE-40 board)



A≒B

OUTPUT
(TP2/IE-40 board)



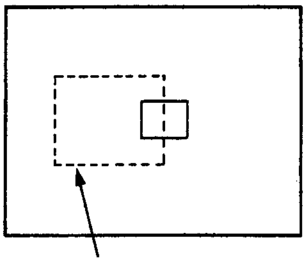
3-5-9. 1H OUT Phase Adjustment

Note: Perform this adjustment only when replacing a DL1 delay line on the IE-40 board.

Object : White portion of pattern box
Equipment : Oscilloscope, Waveform monitor
To be extended : VA-138 board
Trigger : pin A5/extension board
Adjustment :

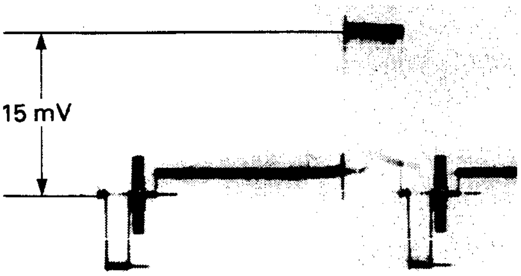
1. Shoot the white portion of the pattern box as shown below.

Window Chart

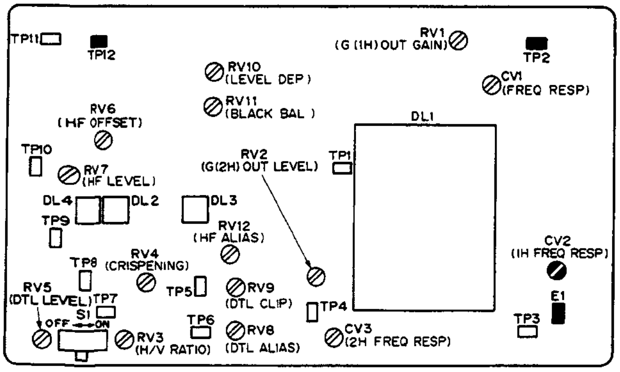


Shoot this portion

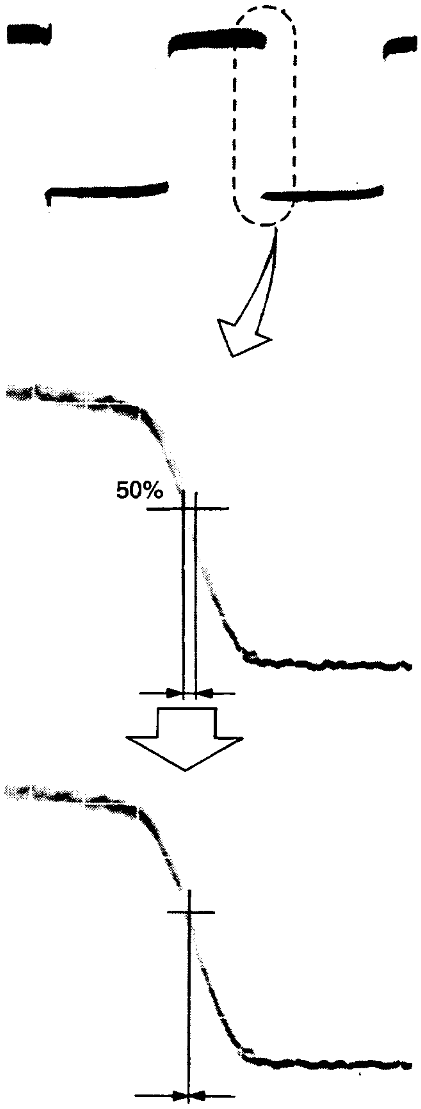
2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 700 ± 15 mV.



IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV11
(BLACK BAL)
RV6
(HF OFFSET)
DL1
TP10
RV2
(G(2H) OUT LEVEL)
TP1
RV7
(HF LEVEL)
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
RV4
TP8 (CRISPENING)
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
TP4
E1
S1
OFF ON
TP6
TP3
RV3
(H/V RATIO)
RV8
(DTL ALIAS)
CV3
(2H FREQ RESP)

3. Connect CH-1 of oscilloscope to TP12 (GND: E1)/IE-40 board.
4. Connect CH-2 of oscilloscope to TP2/IE-40 board (GND: pin A1/extension board).
5. Adjust ⊘CV2/IE-40 board so that the waveform phase between the CH1 and CH2 is coincided.



0 ± 15 ns

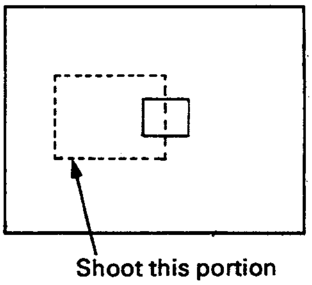
3-5-10. 2H OUT Phase Adjustment

Note: Perform this adjustment only when replacing a DL1 delay line on the IE-40 board.

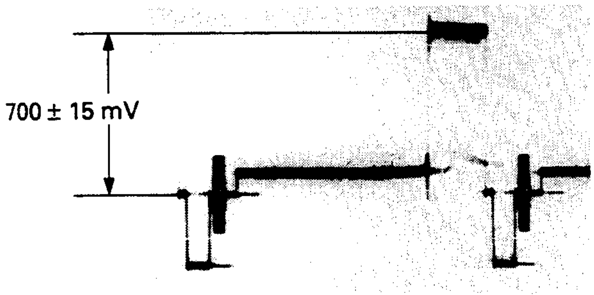
Object : White portion of pattern box
Equipment : Oscilloscope, Waveform monitor
To be extended : VA-138 board
Trigger : pin A5/extension board
Adjustment :

1. Shoot the white portion of the pattern box as shown below.

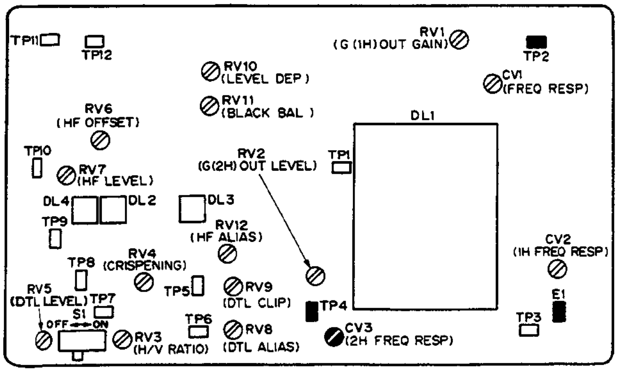
Window Chart


Shoot this portion

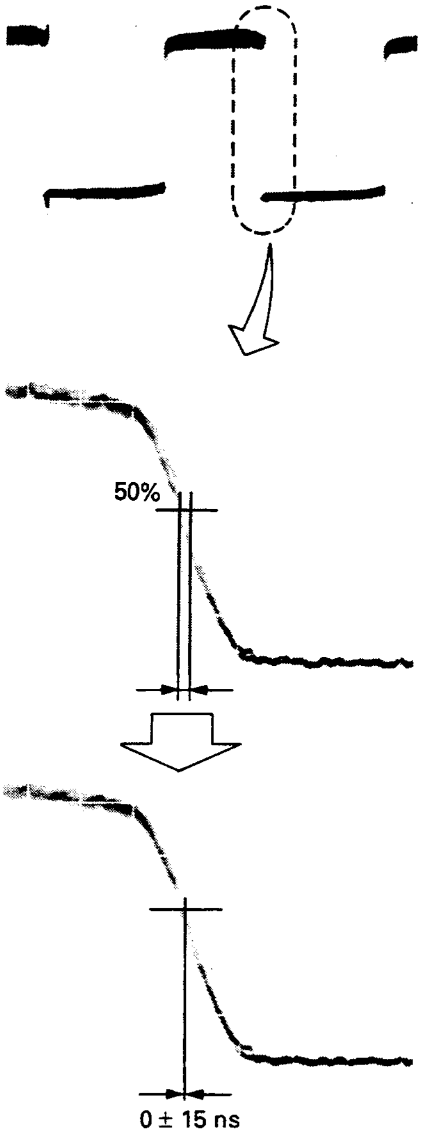
2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 700 ± 15 mV.



IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
RV11
(BLACK BAL)
CV1
(FREQ RESP)
RV6
(HF OFFSET)
DL1
TP10
RV7
(HF LEVEL)
RV2
(G(2H) OUT LEVEL)
TP1
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
TP8
RV4
(CRISPENING)
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
TP4
E1
S1
OFF ⟷ ON
TP6
RV3
(H/V RATIO)
RV8
(DTL ALIAS)
CV3
(2H FREQ RESP)
TP3

3. Connect CH-1 of oscilloscope to TP2 (GND: E1)/IE-40 board.
4. Connect CH-2 of oscilloscope to TP4/IE-40 board (GND: pin A1/extension board).
5. Adjust ⊘CV3/IE-40 board so that the waveform phase between the CH1 and CH2 is coincided.



3-5-11. G ch GAIN Adjustment

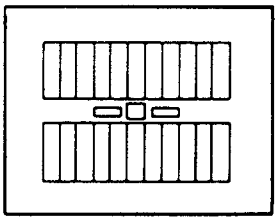
Note: The Item 3-5-12. R/B Preset Adjustment must be done before this adjustment.

Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Preparation :

- WHITE BAL switch (camera side panel) → PRESET
- OUTPUT switch (camera side panel) → CAM (DCC OFF)

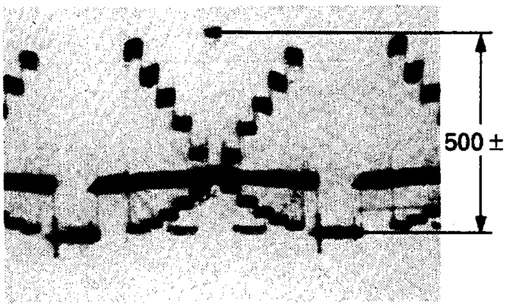
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control so that the chart frame matches the underscanned picture frame on the screen.



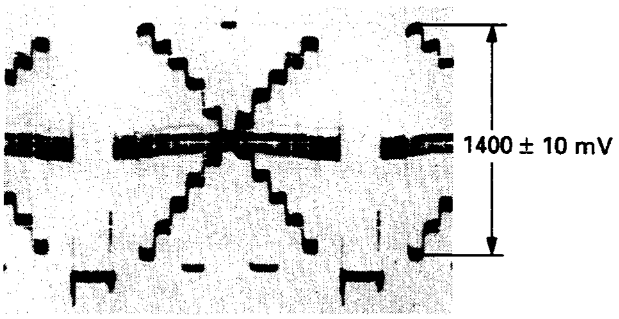
Monitor Screen

2. Adjust the iris control so that the video level at TP5 (GND: E1)/PR-180 board is 500 ± 10 mV.



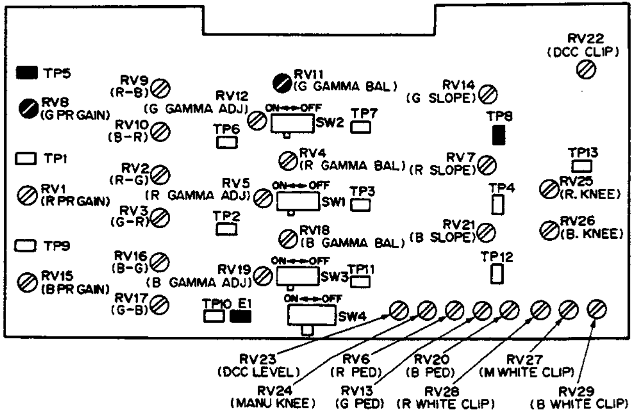
Note: Do not adjust the iris control until the Item 3-5-12. are completed.

3. Connect CH-1 of oscilloscope to TP8 (GND: E1)/ PR-180 board.
4. Check that the wateform level does not change when SW2 (GAM) /PR-180 board is repeatedly turned ON and OFF. (If it changes, adjust ●RV11/PR-180 board.)
5. Adjust ●RV8/PR-180 board so that the video level is 1400 ± 10 mV.



6. After ajustment is completed, set the SW2 (GAM)/PR-180 board to ON.

PR-180 BOARD —COMPONENT SIDE—

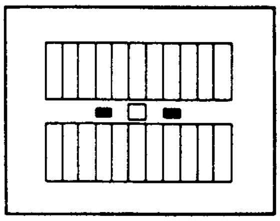

RV22
(DCC CLIP)
TP5
RV9
(R-B)
RV11
(G GAMMA BAL)
RV14
(G SLOPE)
RV8
(G PR GAIN)
RV12
(G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10
(B-R)
TP6
TP1
RV4
(R GAMMA BAL)
RV7
(R SLOPE)
TP13
RV2
(R-G)
RV1
(R PR GAIN)
RV5
(R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV25
(R. KNEE)
RV3
(G-R)
TP2
RV18
(B GAMMA BAL)
RV21
(B SLOPE)
RV26
(B. KNEE)
TP9
RV16
(B-G)
RV15
(B PR GAIN)
RV19
(B GAMMA ADJ)
ON↔OFF
SW3
TP11
TP12
RV17
(G-B)
TP10
E1
ON↔OFF
SW4
RV23
(DCC LEVEL)
RV6
(R PED)
RV20
(B PED)
RV27
(M WHITE CLIP)
RV24
(MANU KNEE)
RV13
(G PED)
RV28
(R WHITE CLIP)
RV29
(B WHITE CLIP)

3-5-12. R/B PRESET WHITE Adjustment

Note: Be sure to complete Item 3-5-11. G-ch GAIN Adjustment.

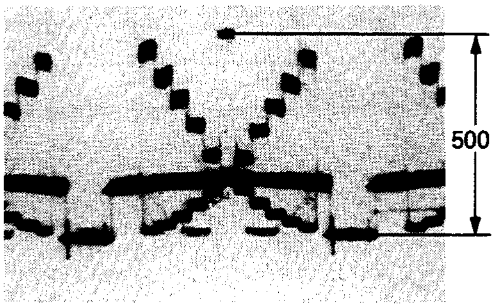
Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.



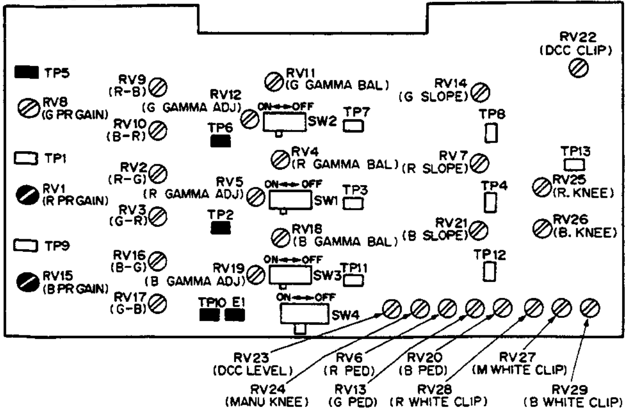
Monitor Screen

2. Adjust the iris control so that the video level at TP5 (GND: E1)/PR-180 board is 500 ± 10 mV.

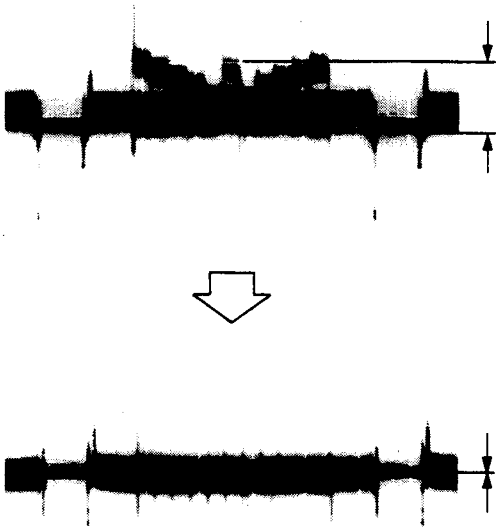


3. Set the oscilloscope to ADD mode and CH-2 INVERT mode.
4. Connect CH-1 and CH-2 of oscilloscope to TP6 (GND: E1)/PR-180 board.
   Adjust CH2-VAR control on the oscilloscope so that the waveform becomes flat for gain correction.

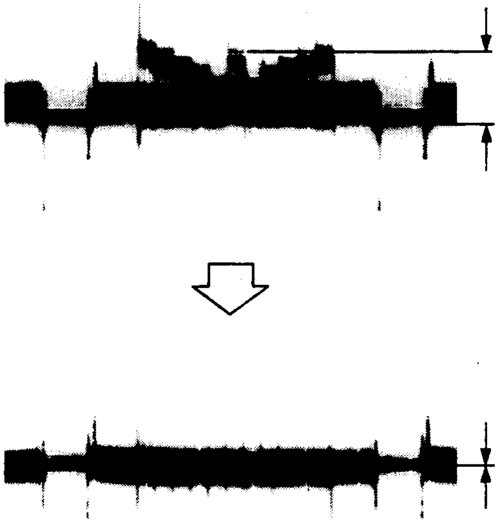
PR-180 BOARD —COMPONENT SIDE—


TP5
RV8 (G PR GAIN)
RV9 (R-B)
RV10 (B-R)
RV12 (G GAMMA ADJ)
TP6
RV11 (G GAMMA BAL)
ON↔OFF
SW2
TP7
RV14 (G SLOPE)
TP8
RV22 (DCC CLIP)
TP1
RV1 (R PR GAIN)
RV2 (R-G)
RV3 (G-R)
RV5 (R GAMMA ADJ)
TP2
RV4 (R GAMMA BAL)
ON↔OFF
SW1
TP3
RV7 (R SLOPE)
TP4
TP13
RV25 (R. KNEE)
RV26 (B. KNEE)
TP9
RV15 (B PR GAIN)
RV16 (B-G)
RV17 (G-B)
RV19 (B GAMMA ADJ)
TP10 E1
RV18 (B GAMMA BAL)
ON↔OFF
SW3
TP11
RV21 (B SLOPE)
TP12
ON↔OFF
SW4
RV23 (DCC LEVEL)
RV24 (MANU KNEE)
RV6 (R PED)
RV13 (G PED)
RV20 (B PED)
RV28 (R WHITE CLIP)
RV27 (M WHITE CLIP)
RV29 (B WHITE CLIP)

5. Connect CH-1 of oscilloscope to TP6 (GND: E1) and CH-2 to TP2 (GND: E1) on the PR-180 board. Adjust ⊘RV1/PR-180 board so that the waveform becomes flat.



6. Connect CH-1 of oscilloscope to TP6 (GND: E1) and CH-2 to TP10 (GND: E1) on the PR-180 board. Adjust ⊘RV15/PR-180 board so that the waveform becomes flat.

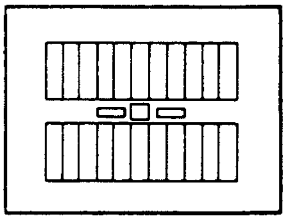


3-5-13. G ch Gamma Balance and Gamma Set Adjustment

Note: After this adjustment, perform the item 3-5-14. and the Item 3-5-15. adjustment.

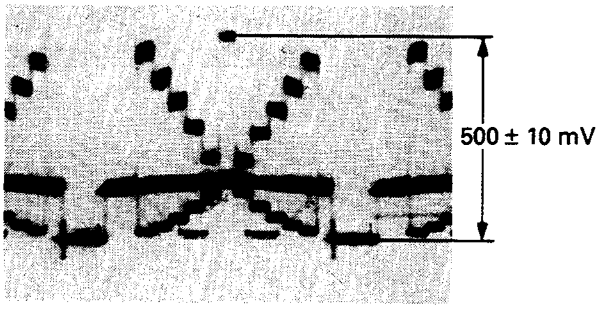
Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control so that the grayscale chart frame matches the underscanned picture frame on the screen.



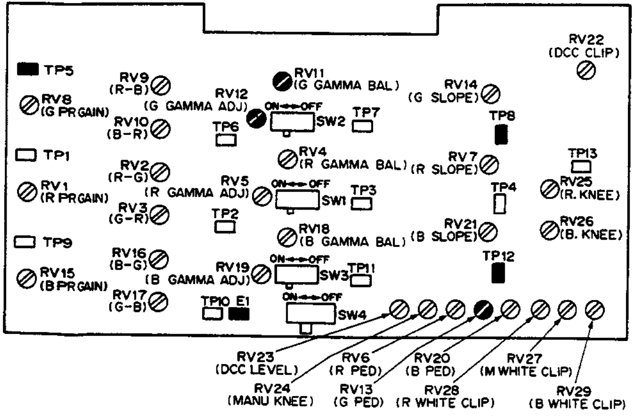
Monitor Screen

2. Adjust the iris control so that the video level at TP5 (GND: E1)/PR-180 board is 500 ± 10 mV on the oscilloscope.

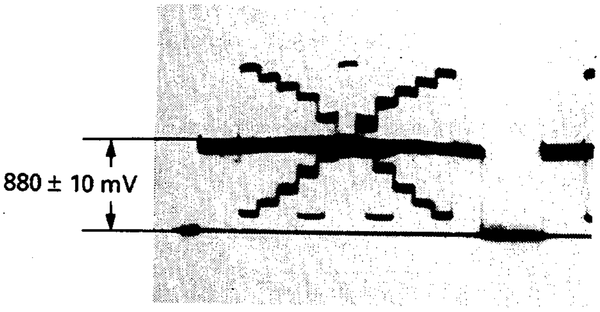


3. Connect a probe of oscilloscope to TP8 (GND: E1)/ PR-180 board.

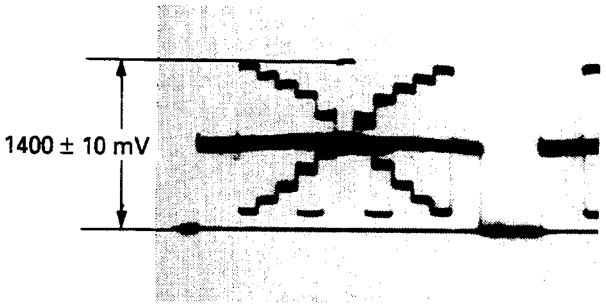
PR-180 BOARD —COMPONENT SIDE—


RV22
(DCC CLIP)
TP5
RV9
(R-B)
RV11
(G GAMMA BAL)
RV14
(G SLOPE)
RV8
(G PR GAIN)
RV12
(G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10
(B-R)
TP6
TP1
RV4
(R GAMMA BAL)
RV7
(R SLOPE)
TP13
RV2
(R-G)
RV1
(R PR GAIN)
RV5
(R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV25
(R. KNEE)
RV3
(G-R)
TP2
RV18
(B GAMMA BAL)
RV21
(B SLOPE)
RV26
(B. KNEE)
TP9
RV16
(B-G)
RV15
(B PR GAIN)
RV19
(B GAMMA ADJ)
ON↔OFF
SW3
TP11
TP12
RV17
(G-B)
TP10
E1
ON↔OFF
SW4
RV23
(DCC LEVEL)
RV6
(R PED)
RV20
(B PED)
RV27
(M WHITE CLIP)
RV24
(MANU KNEE)
RV13
(G PED)
RV28
(R WHITE CLIP)
RV29
(B WHITE CLIP)

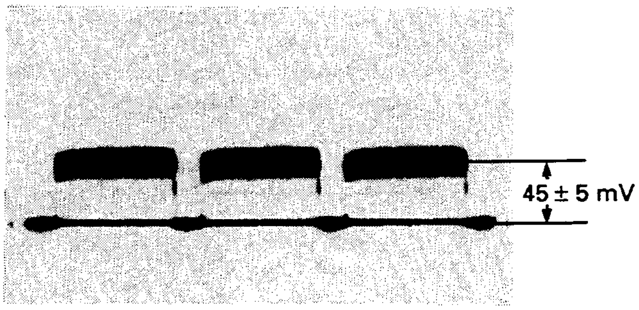
4. Adjust ●RV12/PR-180 board so that the cross point level of the video signal is 880 ± 10 mV.



5. Adjust ●RV11/PR-180 board so that the white level of grayscale chart is 1400 ± 10 mV.



6. Cover the lens with lens cap.
7. Adjust ●RV13/PR-180 board so that the pedestal level is 45 ± 5 mV.



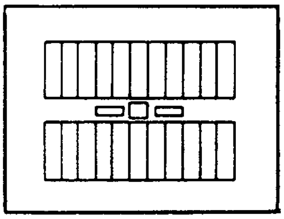
8. Remove the lens cap.
9. Repeat procedure 4 through procedure 8 several times.
10. Do not adjust the iris control until the Item 3-5-14. and the Item 3-5-15. are completed.

3-5-14. R ch Gamma Balance Adjustment

Note: The Item 3-5-13. must be done before this adjustment.

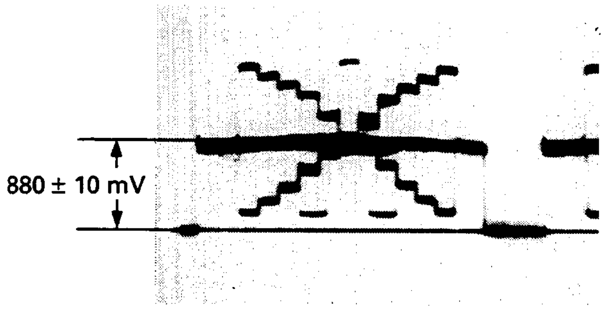
Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.

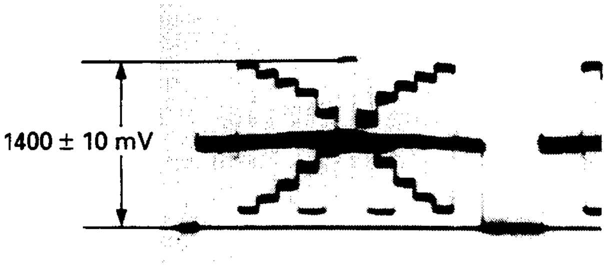


Monitor Screen

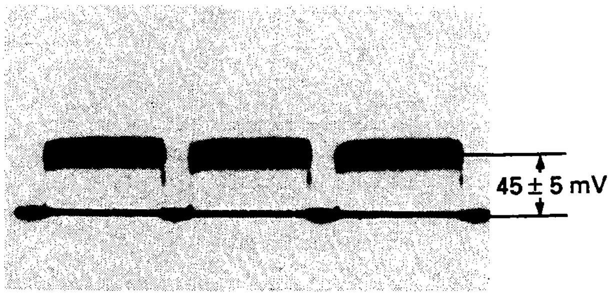
2. Make sure that the video level at TP5 (GND: E1)/PR-180 board is 500 ± 10 mV.
3. Connect a probe of oscilloscope to TP4 (GND: E1)/PR-180 board.
4. Adjust ⊘RV5/PR-180 board so that the crosspoint level of the video signal is 880 ± 10 mV.



5. Adjust ⊘RV4/PR-180 board so that the white level of grayscale chart is 1400 ± 10 mV.

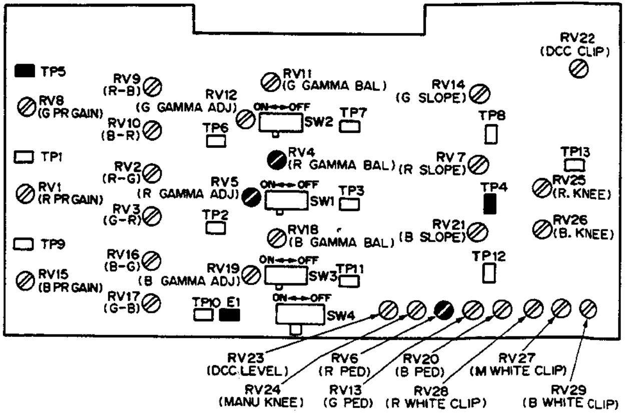


6. Cover the lens with lens cap.
7. Adjust ⊘RV6/PR-180 board so that the pedestal level is 45 ± 5 mV.



8. Remove the lens cap.
9. Repeat procedure 4 through procedure 8 several times.
10. Do not adjust the iris control until the Item 3-5-15. are completed.

PR-180 BOARD —COMPONENT SIDE—

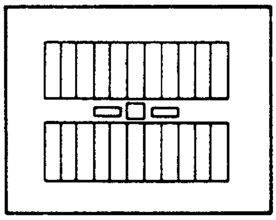

RV22
(DCC CLIP)
TP5
RV9
(R-B)
RV11
(G GAMMA BAL)
RV14
(G SLOPE)
RV8
(G PR GAIN)
RV12
(G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10
(B-R)
TP6
TP1
RV4
(R GAMMA BAL)
RV7
(R SLOPE)
TP13
RV2
(R-G)
RV1
(R PR GAIN)
RV5
(R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV25
(R. KNEE)
RV3
(G-R)
TP2
RV18
(B GAMMA BAL)
RV21
(B SLOPE)
RV26
(B. KNEE)
TP9
RV16
(B-G)
RV15
(B PR GAIN)
RV19
(B GAMMA ADJ)
ON↔OFF
SW3
TP11
TP12
RV17
(G-B)
TP10
E1
ON↔OFF
SW4
RV23
(DCC LEVEL)
RV6
(R PED)
RV20
(B PED)
RV27
(M WHITE CLIP)
RV24
(MANU KNEE)
RV13
(G PED)
RV28
(R WHITE CLIP)
RV29
(B WHITE CLIP)

3-5-15. B ch Gamma Balance Adjustment

Note: The Item 3-5-13. must be done before this adjustment.

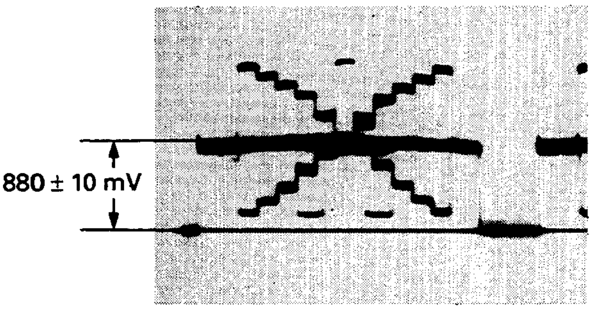
Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.

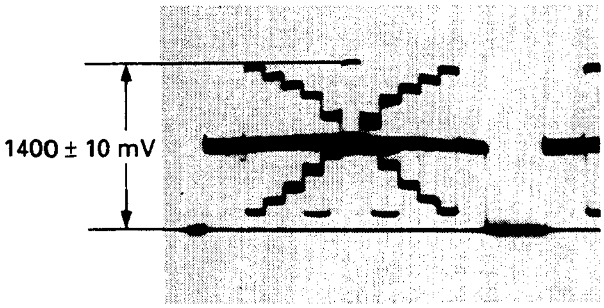


Monitor Screen

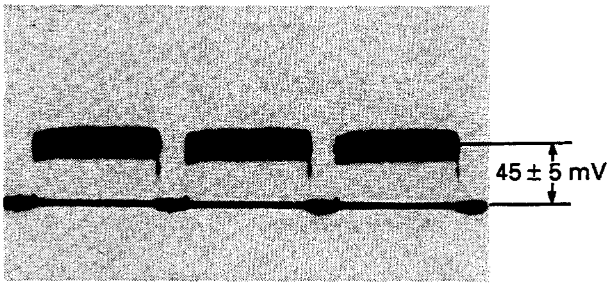
2. Make sure that the video level at TP5 (GND: E1)/ PR-180 board is 500 ± 10 mV.
3. Connect a probe of oscilloscope to TP12 (GND: E1)/ PR-180 board.
4. Adjust ⊘RV19/PR-180 board so that the cross point level of the video signal is 880 ± 10 mV.



5. Adjust ⊘RV18/PR-180 board so that the white level of grayscale chart is 1400 ± 10mV.

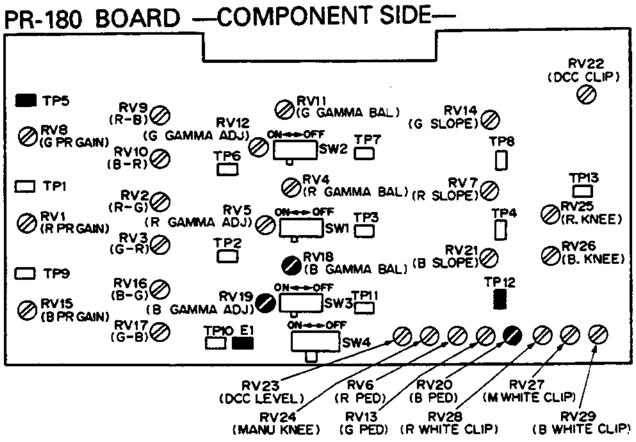


6. Cover the lens with lens cap.
7. Adjust ⊘RV20/PR-180 board so that the pedestal level is 45 ± 5 mV.



8. Remove the lens cap.
9. Repeat procedure 4 through procedure 8 several times.

PR-180 BOARD —COMPONENT SIDE—

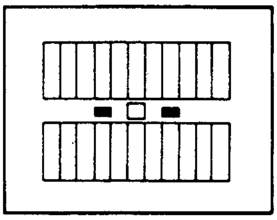

RV22
(DCC CLIP)
TP5
RV9
(R-B)
RV11
(G GAMMA BAL)
RV14
(G SLOPE)
RV8
(G PR GAIN)
RV12
(G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10
(B-R)
TP6
TP1
RV4
(R GAMMA BAL)
RV7
(R SLOPE)
TP13
RV2
(R-G)
RV1
(R PR GAIN)
RV5
(R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV25
(R. KNEE)
RV3
(G-R)
TP2
RV18
(B GAMMA BAL)
RV21
(B SLOPE)
RV26
(B. KNEE)
TP9
RV16
(B-G)
RV19
(B GAMMA ADJ)
ON↔OFF
SW3
TP11
TP12
RV15
(B PR GAIN)
RV17
(G-B)
TP10
E1
ON↔OFF
SW4
RV23
(DCC LEVEL)
RV6
(R PED)
RV20
(B PED)
RV27
(M WHITE CLIP)
RV24
(MANU KNEE)
RV13
(G PED)
RV28
(R WHITE CLIP)
RV29
(B WHITE CLIP)

Note: After adjustment is completed, perform the Item 3-5-17. R/B-ch Gamma Balance Adjustment.

3-5-16. Flare Adjustment

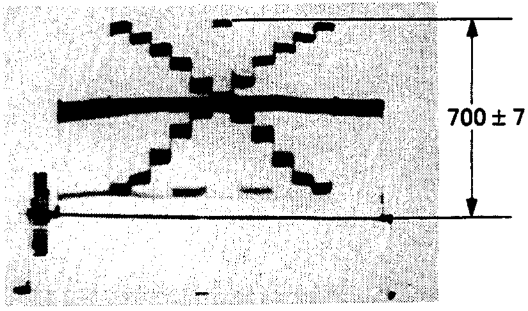
Object : Grayscale chart
Equipment : Waveform monitor
To be extended : VA-138 board
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.

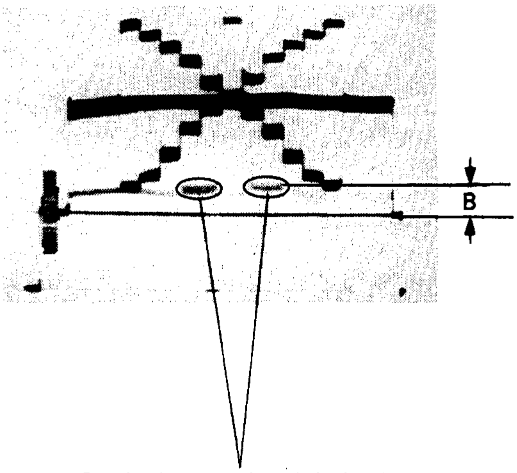


Monitor Screen

2. Adjust the iris control so that the while level of video signal is 700 ± 7 mV.

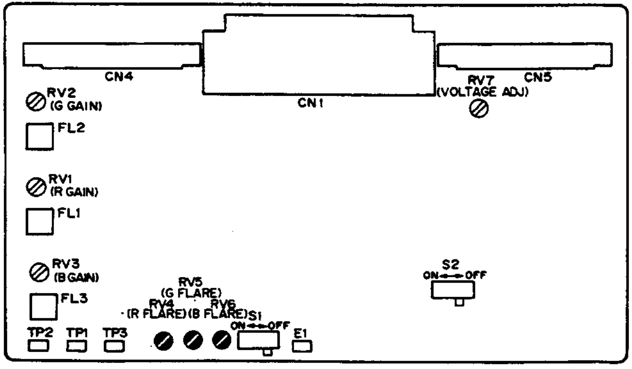


3. Adjust ⊘RV4, RV5, and RV6/VA-138 board so that the level "B" is maximum and the carrier leakage is minimum at the same time.



Carrier leakage is minimized.

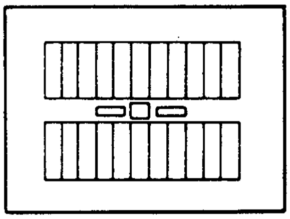
VA-138 BOARD —COMPONENT SIDE—


CN4
CN1
CN5
RV7
(VOLTAGE ADJ)
RV2
(G GAIN)
FL2
RV1
(R GAIN)
FL1
RV3
(B GAIN)
FL3
RV5
(G FLARE)
RV4
(R FLARE)
RV6
(B FLARE)
S1
ON OFF
S2
ON OFF
TP2
TP1
TP3
E1

3-5-17. R/B ch Gamma Set and Preset Adjustments

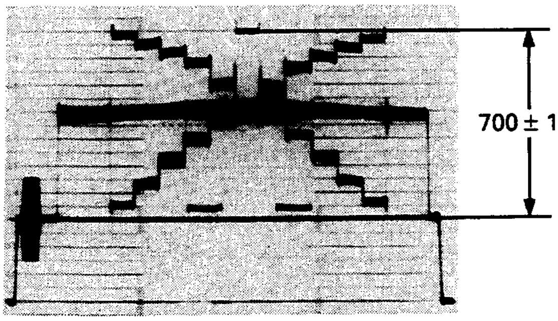
Object : Grayscale chart
Equipment : Waveform monitor, Vectorscope (MAX GAIN)
To be extended : VA-138 board
Adjustment :

1. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.

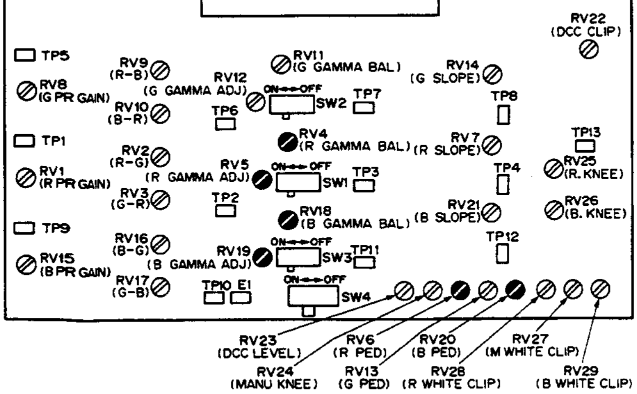


Monitor Screen

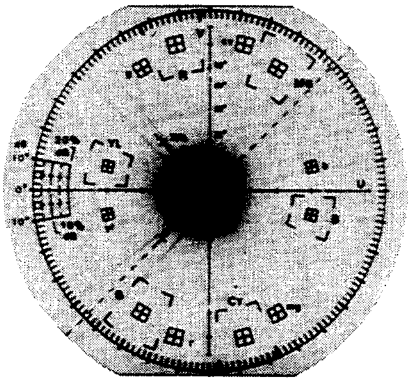
2. Adjust the iris control so that video level is 700 ± 10 mV on the waveform monitor.



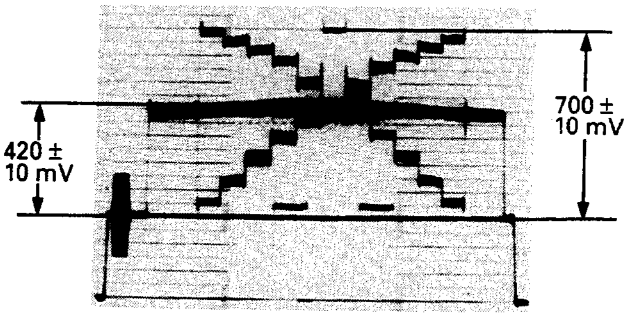
PR-180 BOARD —COMPONENT SIDE—


RV22
(DCC CLIP)
TP5
RV9
(R-B)
RV8
(G PR GAIN)
RV12
(G GAMMA ADJ)
RV11
(G GAMMA BAL)
RV14
(G SLOPE)
ON⟷OFF
SW2
TP7
TP8
RV10
(B-R)
TP6
TP1
RV4
(R GAMMA BAL)
RV7
(R SLOPE)
TP13
RV2
(R-G)
RV1
(R PR GAIN)
RV5
(R GAMMA ADJ)
ON⟷OFF
SW1
TP3
TP4
RV25
(R. KNEE)
RV3
(G-R)
TP2
RV18
(B GAMMA BAL)
RV21
(B SLOPE)
RV26
(B. KNEE)
TP9
RV16
(B-G)
RV15
(B PR GAIN)
RV19
(B GAMMA ADJ)
ON⟷OFF
SW3
TP11
TP12
RV17
(G-B)
TP10 E1
ON⟷OFF
SW4
RV23
(DCC LEVEL)
RV6
(R PED)
RV20
(B PED)
RV27
(M WHITE CLIP)
RV24
(MANU KNEE)
RV13
(G PED)
RV28
(R WHITE CLIP)
RV29
(B WHITE CLIP)

3. ●RV5/PR-180 board
●RV19/PR-180 board
Alternately adjust the above two controls several times so that the beam spot is in the center of vectorscope.
4. ●RV4/PR-180 board
●RV18/PR-180 board
Alternately adjust the above two controls several times so that the beam spot is in the center of vectorscope.



5. Cover the lens with lens cap.
6. Alternately adjust ●RV6 and ●RV20 on the PR-180 board several times so that beam spot is in the center of vectorscope.
7. Remove the lens cap.
8. Repeat procedure 3 through procedure 7 several times.
9. After the adjustment, the following specifications must be met.
If not, perform from Item 3-5-2. G ch Video Level Adjustment once more.



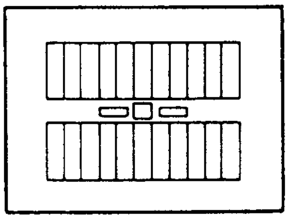
3-5-18. KNEE Adjustment

Note:
The following items must be done before this Adjustment:
- Item 3-5-13. G ch Gamma Balance and Gamma Set Adjustment
- Item 3-5-14. R ch Gamma Balance Adjustment
- Item 3-5-15. B ch Gamma Balance Adjustment
- Item 3-5-17. R/B ch Gamma Set and Preset Adjustment

Object : Grayscale chart
Equipment : Waveform monitor
To be extended : VA-138 board
Preparation :
- Set the GAIN switch on the side of the camera to MID (9 dB).
- ⊘RV7, 14, 21/PR-180 board → Fully clockwise ↻

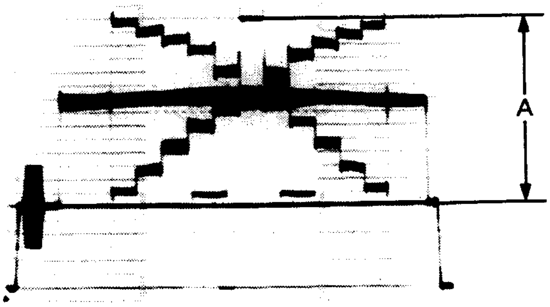
Trigger : pin A5/extension board

Adjustment procedures :
1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.

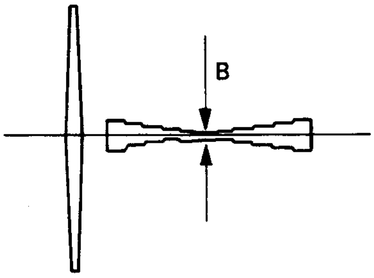


Monitor Screen

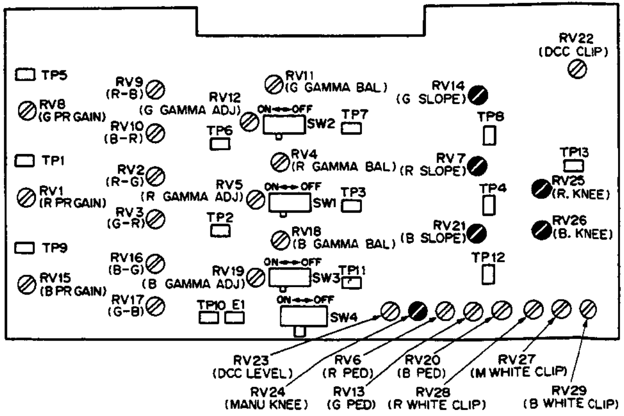
2. Adjust the iris control so that the video level "A" at VIDEO OUT connector (camera side panel) is 700 ± 7 mV.



3. ⊘RV 7, 14, 21/PR-180 → Fully clockwise ↻
4. Turn ⊘RV24/PR-180 counterclockwise slowly from fully clockwise and stop where the level "A" at VIDEO OUT connector becomes 728 ± 7 mV.
5. Adjust ⊘RV25, 26/PR-180 several times so that the carrier leakage of center in the waveform is minimized.
6. Turn ⊘RV14/PR-180 counterclockwise slowly and stop where the level "A" at VIDEO OUT connector becomes 784 ± 7 mV.
7. Adjust ⊘RV7, 21/PR-180 so that the carrier leakage "B" is minimized.



PR-180 BOARD —COMPONENT SIDE—

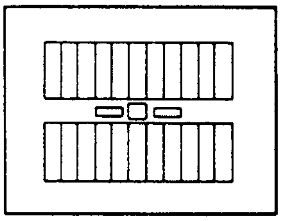

RV22
(DCC CLIP)
TP5
RV9
(R-B)
RV11
(G GAMMA BAL)
RV14
(G SLOPE)
RV8
(G PR GAIN)
RV12
(G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10
(B-R)
TP6
TP1
RV4
(R GAMMA BAL)
RV7
(R SLOPE)
TP13
RV2
(R-G)
RV25
(R. KNEE)
RV1
(R PR GAIN)
RV5
(R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV3
(G-R)
TP2
RV18
(B GAMMA BAL)
RV21
(B SLOPE)
RV26
(B. KNEE)
TP9
RV16
(B-G)
ON↔OFF
TP12
RV15
(B PR GAIN)
RV19
(B GAMMA ADJ)
SW3
TP11
RV17
(G-B)
TP10
E1
ON↔OFF
SW4
RV23
(DCC LEVEL)
RV6
(R PED)
RV20
(B PED)
RV27
(M WHITE CLIP)
RV24
(MANU KNEE)
RV13
(G PED)
RV28
(R WHITE CLIP)
RV29
(B WHITE CLIP)

3-5-19. DCC Adjustment

Object : Grayscale chart
Equipment : Waveform monitor
To be extended : VA-138 board
Preparation :
- OUTPUT switch (camera side panel) → CAM (DCC ON)

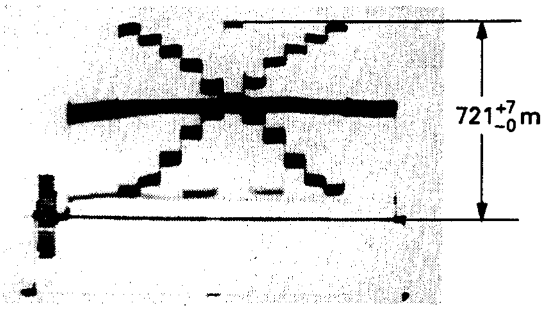
Adjustment :

1. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.

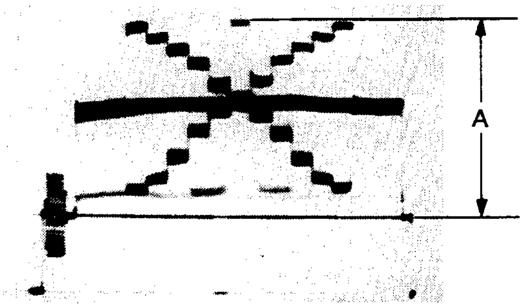


Monitor Screen

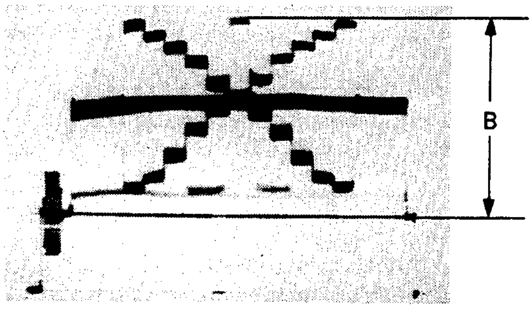
2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 721^{+7}_{-0} mV.



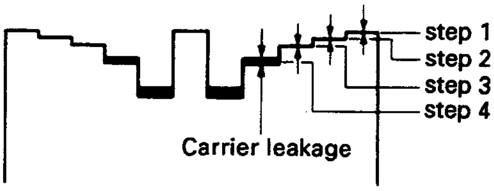
3. Adjust ⊘RV23/PR-180 board so that the level "A" is 707^{+7}_{-0} mV.



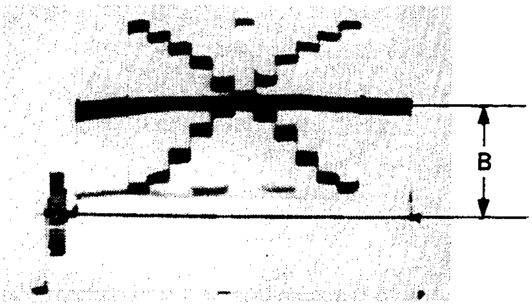
4. Set the GAIN switch on the side of camera to MID (9 dB).
5. Adjust ⊘ RV22/PR-180 board so that the level "B" is 630 ± 7 mV.



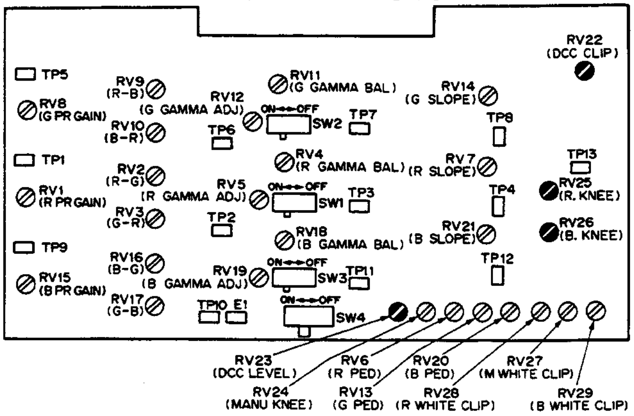
6. Alternately readjust ⊘RV25 and ⊘RV26/PR-180 board so that the carrier leakage level of step 2 and 3 is minimized.


step 1
step 2
step 3
step 4
Carrier leakage

7. Set the GAIN switch on the side of camera to low (0 dB).
8. Set the OUTPUT switch on the side of camera to DCC OFF.
9. Adjust the iris control so that the cross point level "B" is 700 ± 7 mV.
10. Set the OUTPUT switch on the side of camera to DCC ON. And make sure that the cross point level "B" is 651 ± 7 mV.



PR-180 BOARD —COMPONENT SIDE—


TP5
RV9 (R-B)
RV8 (G PR GAIN)
RV12 (G GAMMA ADJ)
RV10 (B-R)
TP6
RV11 (G GAMMA BAL)
ON↔OFF
SW2
TP7
RV14 (G SLOPE)
TP8
RV22 (DCC CLIP)
TP1
RV2 (R-G)
RV1 (R PR GAIN)
RV5 (R GAMMA ADJ)
RV3 (G-R)
TP2
RV4 (R GAMMA BAL)
ON↔OFF
SW1
TP3
RV7 (R SLOPE)
TP4
TP13
RV25 (R. KNEE)
RV26 (B. KNEE)
TP9
RV16 (B-G)
RV15 (B PR GAIN)
RV19 (B GAMMA ADJ)
RV17 (G-B)
TP10
E1
RV18 (B GAMMA BAL)
ON↔OFF
SW3
TP11
RV21 (B SLOPE)
TP12
ON↔OFF
SW4
RV23 (DCC LEVEL)
RV24 (MANU KNEE)
RV6 (R PED)
RV13 (G PED)
RV20 (B PED)
RV28 (R WHITE CLIP)
RV27 (M WHITE CLIP)
RV29 (B WHITE CLIP)

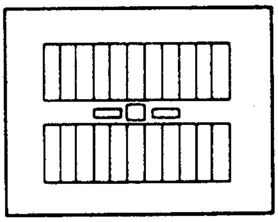
3-5-20. White Clip Adjustment

Object : Grayscale chart
Equipment : Waveform monitor
To be extended : VA-138 board
Preparation :

- Set the OUTPUT switch on the side of the camera to CAM.
- Set the GAIN switch on the side of the camera to 18 dB.

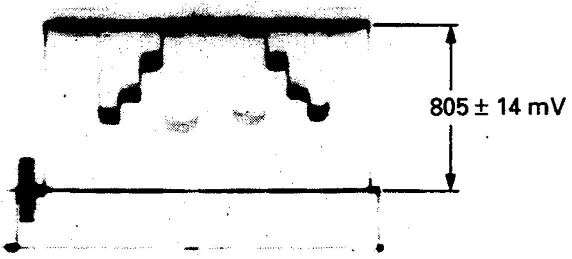
Adjustment :

1. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.



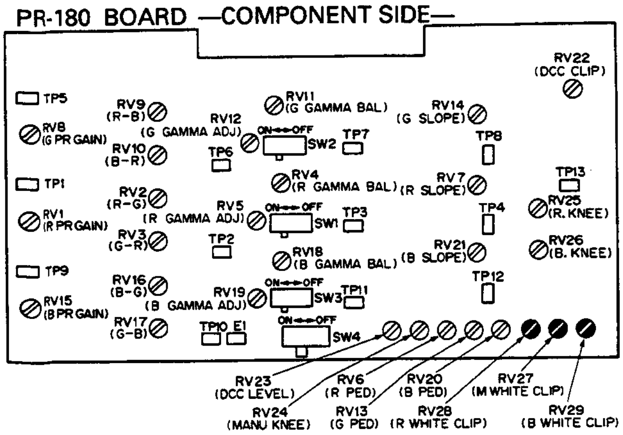
Monitor Screen

2. Adjust ⊘RV27/PR-180 board so that the white peak level is 805 ± 14 mV on the waveform monitor.



3. Open the lens iris fully.
4. Adjust ⊘RV28, ⊘RV29/PR-180 board several times so that the carrier leakage of the white peak level is minimized.
5. Repeat the steps 3 and 4 several times.

PR-180 BOARD —COMPONENT SIDE—


RV22 (DCC CLIP)
TP5
RV9 (R-B)
RV11 (G GAMMA BAL)
RV14 (G SLOPE)
RV8 (G PR GAIN)
RV12 (G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10 (B-R)
TP6
TP13
TP1
RV4 (R GAMMA BAL)
RV7 (R SLOPE)
RV2 (R-G)
RV5 (R GAMMA ADJ)
ON↔OFF
SW1
TP3
TP4
RV25 (R. KNEE)
RV1 (R PR GAIN)
RV3 (G-R)
TP2
RV18 (B GAMMA BAL)
RV21 (B SLOPE)
RV26 (B. KNEE)
TP9
TP12
RV16 (B-G)
RV19 (B GAMMA ADJ)
ON↔OFF
SW3
TP11
RV15 (B PR GAIN)
RV17 (G-B)
TP10 E1
ON↔OFF
SW4
RV23 (DCC LEVEL)
RV6 (R PED)
RV20 (B PED)
RV27 (M WHITE CLIP)
RV24 (MANU KNEE)
RV13 (G PED)
RV28 (R WHITE CLIP)
RV29 (B WHITE CLIP)

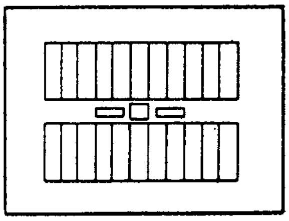
Note: After adjustment is completed, set the GAIN switch on the side of the camera to 0 dB.

3-6. IMAGE ENHANCER SYSTEM ADJUSTMENT (IE-40 board)

3-6-1. HF Offset Adjustment

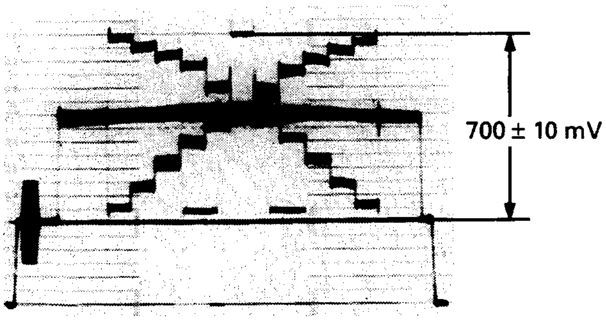
Object : Grayscale chart
Equipment : Oscilloscope, Waveform monitor
To be extended : VA-138 board
Trigger : pin A5/extension board
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.

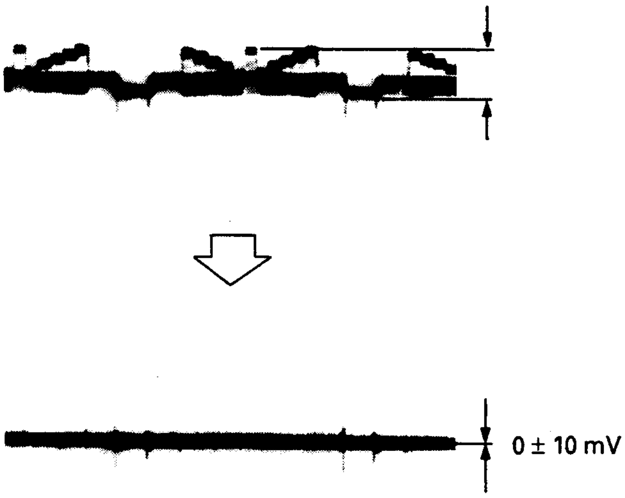


Monitor Screen

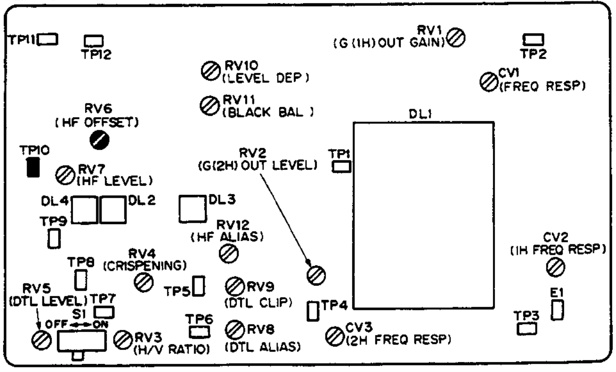
2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 700 ± 10 mV.



3. Adjust ⊘RV6/IE-40 board so that the DC offset level at TP10/IE-40 board (GND: pinA1/extension board) is 0 ± 10 mV.



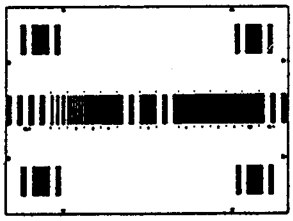
IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV11
(BLACK BAL)
RV6
(HF OFFSET)
DL1
TP10
RV2
(G(2H) OUT LEVEL)
TP1
RV7
(HF LEVEL)
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
RV4
TP8
(CRISPENING)
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
TP4
E1
S1
OFF ON
TP6
TP3
RV3
(H/V RATIO)
RV8
(DTL ALIAS)
CV3
(2H FREQ RESP)

3-6-2. Aperture Adjustment

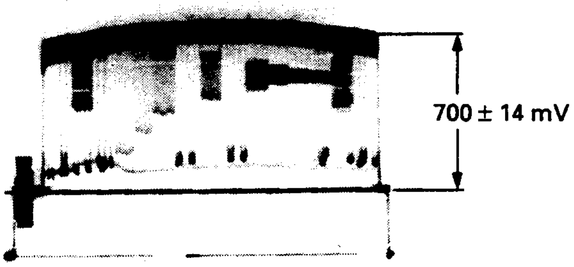
Object : Burst chart
Equipment : Waveform monitor
To be extended : VA-138 board
Preparation : DTL switch (S1)/IE-40 → OFF
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame the screen.

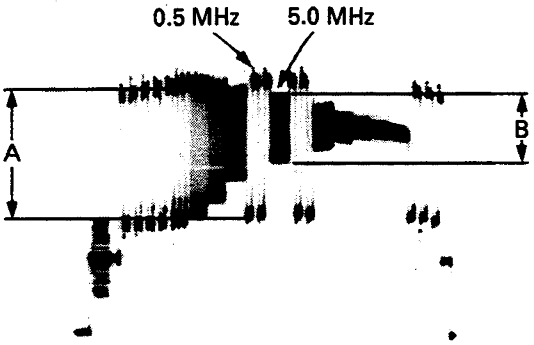


Monitor Screen

2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 700 ± 14 mV.

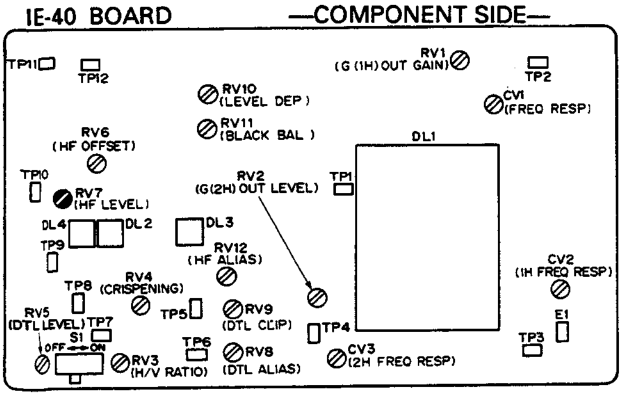


3. Adjust ●RV7/IE-40 board so that the ratio of 5 MHz level "B" at VIDEO OUT connector (camera side panel) to 0.5 MHz level "A" is 85 ± 5%.
(To get the following picture, set the LINE SEL switch on the waveform monitor to "15 LINES". And adjust the VAR control of LINE SEL.)



B = A × (85 ± 5%)

IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV11
(BLACK BAL)
RV6
(HF OFFSET)
DL1
TP10
RV7
(HF LEVEL)
RV2
(G(2H) OUT LEVEL)
TP1
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
TP8
RV4
(CRISPENING)
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
TP4
E1
S1
OFF ↔ ON
TP6
TP3
RV3
(H/V RATIO)
RV8
(DTL ALIAS)
CV3
(2H FREQ RESP)

3-6-3. CRISPENING Adjustment

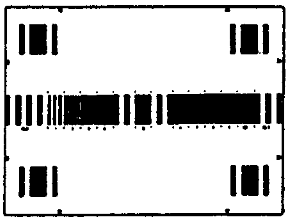
Note: Perform the adjustment only when replacing a ⊘RV4 potentiometer on the IE-40 board.

Object : Burst chart
Equipment : Oscilloscope, Waveform monitor
To be extended : VA-138 board
Test point : TP11/IE-40 board
(GND: pin A1/extension board)
Trigger : pin A5/extension board
Preparation :

- Set the GAIN switch on the side of the camera to 0 dB.

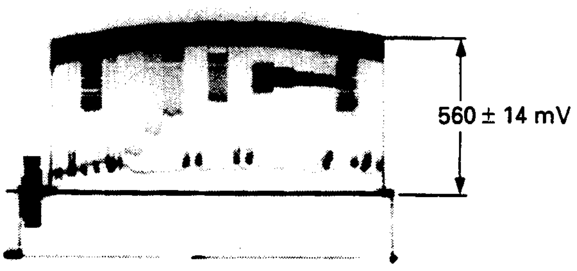
Adjustment point : ⊘RV4/IE-40 board
Adjustment :

1. Adjust the zoom control of the lens so that the chart frame matches the underscanned picture frame on the screen.

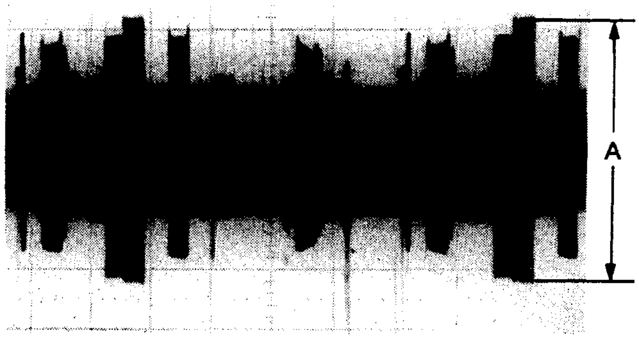


Monitor Screen

2. Adjust the iris control so that the video level at VIDEO OUT connector (camera side panel) is 560 ± 14 mV.

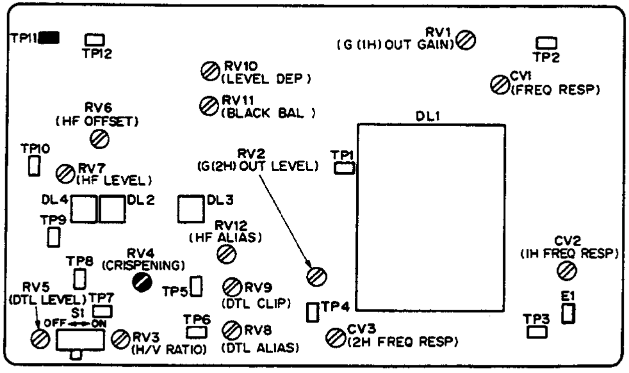


3. ⊘RV4/IE-40 board → Fully counterclockwise ↺
4. Adjust the video level "A" at TP11/IE-40 board (GND: Pin 1A/extension board) with the VAR knob of the oscilloscope so that it is 6 cm on the scale of the oscilloscope display.



5. Adjust ⊘RV4/IE-40 board so that the video level at TP11/IE-40 board (GND: Pin A1/extension board) is 5.75 ± 0.2 cm on the scale of the oscilloscope display.

IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1 (G (1H) OUT GAIN)
TP2
RV10 (LEVEL DEP)
CV1 (FREQ RESP)
RV11 (BLACK BAL)
RV6 (HF OFFSET)
DL1
TP10
RV7 (HF LEVEL)
RV2 (G(2H) OUT LEVEL)
TP1
DL4
DL2
DL3
TP9
RV12 (HF ALIAS)
CV2 (1H FREQ RESP)
TP8
RV4 (CRISPENING)
TP5
RV9 (DTL CLIP)
E1
RV5 (DTL LEVEL)
TP7
S1
OFF ↔ ON
TP4
TP6
TP3
RV3 (H/V RATIO)
RV8 (DTL ALIAS)
CV3 (2H FREQ RESP)

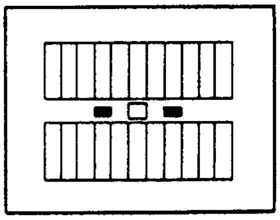
3-6-4. H.V.RATIO Adjustment

Object : Grayscale chart
Equipment : B/W monitor, waveform monitor
To be extended : VA-138 board
Preparation :

- Set the S1 (DTL) switch on the IE-40 board to ON.
- Set the WHITE BAL switch on the side of the camera to PRESET.

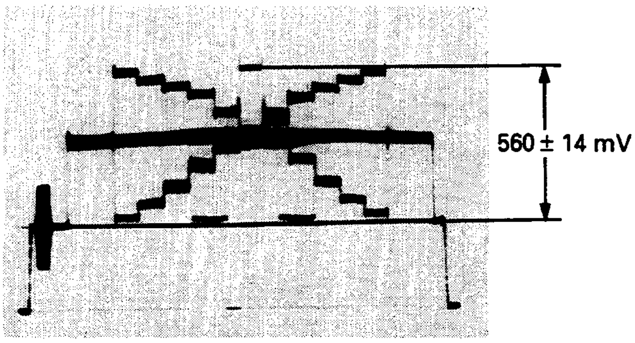
Adjustment point : ⊘RV3/IE-40 board
Adjustment :

1. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.

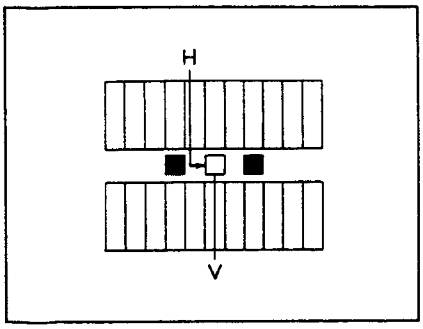


Monitor Screen

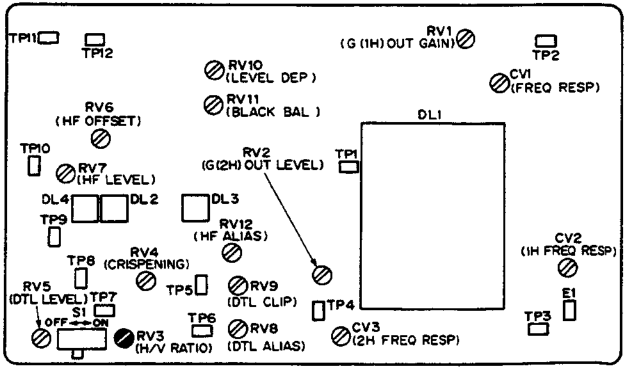
2. Adjust the iris control so that the video level is 560 ± 14 mV on the waveform monitor.



3. Observing the point indicated on the B/W monitor (See the figure below.), adjust ⊘RV3/IE-40 board so that the ratio of H to V of DTL is 3 to 2.



IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1
(G (1H) OUT GAIN)
TP2
RV10
(LEVEL DEP)
CV1
(FREQ RESP)
RV11
(BLACK BAL)
RV6
(HF OFFSET)
DL1
TP10
RV7
(HF LEVEL)
RV2
(G (2H) OUT LEVEL)
TP1
DL4
DL2
DL3
TP9
RV12
(HF ALIAS)
CV2
(1H FREQ RESP)
TP8
RV4
(CRISPENING)
RV5
(DTL LEVEL)
TP7
TP5
RV9
(DTL CLIP)
TP4
E1
S1
OFF ↔ ON
TP6
TP3
RV3
(H/V RATIO)
RV8
(DTL ALIAS)
CV3
(2H FREQ RESP)

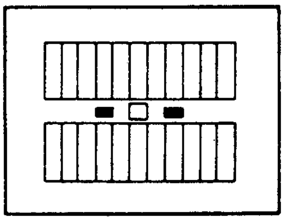
3-6-5. Detail Level Adjustment

Object : Grayscale chart
Equipment : Waveform monitor
To be extended : VA-138 board
Preparation :

- WHITE BAL switch (camera side panel) → PRESET
- DTL switch (S1)/IE-40 → ON

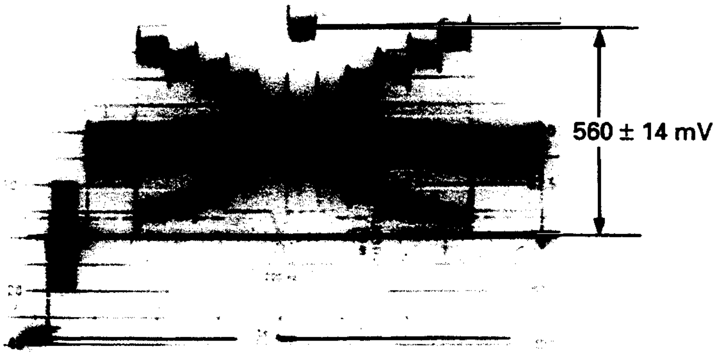
Adjustment point : ⊘RV5/IE-40 board
Adjustment :

1. Adjust the zoom control so that the grayscale chart frame touches the underscanned picture frame on the monitor.

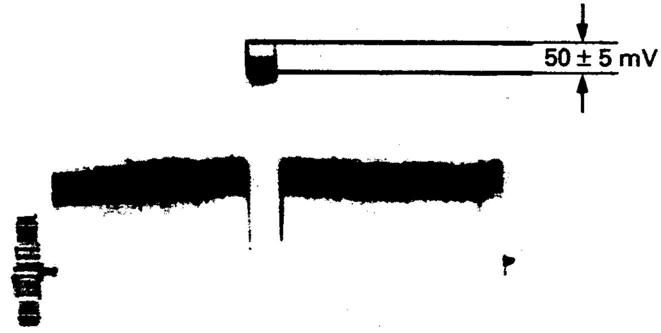


Monitor Screen

2. Adjust the iris control so that the white level of the grayscale chart is 560 ± 14 mV.

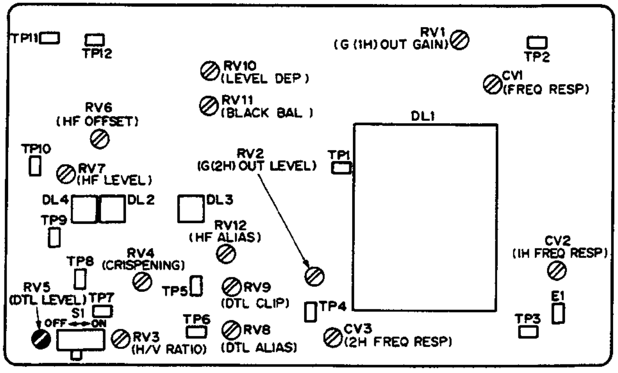


3. Adjust "LINE SELECTOR (15 LINE)" of the waveform monitor so that a selected line is overlapped with white level of the grayscale chart on the waveform monitor.
   Adjust ⊘RV 5/IE-40 board so that the DTL level is 50 ± 5 mV.
   Note: If the two DTL level are not balanced, take the bigger one.



4. Repeat the 3-6-4. H.V.RATIO Adjustment to the 3-6-5. Detail Level Adjustment several times.
5. After the adjustment, set the DTL switch (S1)/IE-40 to OFF.

IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1 (G (1H) OUT GAIN)
TP2
RV10 (LEVEL DEP)
RV11 (BLACK BAL)
CV1 (FREQ RESP)
RV6 (HF OFFSET)
DL1
TP10
RV7 (HF LEVEL)
RV2 (G(2H) OUT LEVEL)
TP1
DL4
DL2
DL3
TP9
RV12 (HF ALIAS)
CV2 (1H FREQ RESP)
TP8
RV4 (CRISPENING)
RV5 (DTL LEVEL)
TP7
TP5
RV9 (DTL CLIP)
S1
OFF ON
TP6
TP4
E1
TP3
RV3 (H/V RATIO)
RV8 (DTL ALIAS)
CV3 (2H FREQ RESP)

3-7 AUTO SYSTEM (AT-78 board)

Note: Be sure to set the S11 (ADJ)/AT-78 board to ON then OFF, before performing the adjustment of auto system.

3-7-1. LOW LIGHT Adjustment

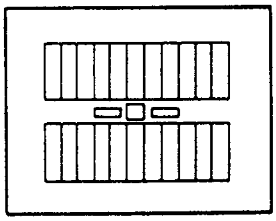
Object : Grayscale chart
Equipment : Waveform monitor
Preparation :

- Set the WHITE BAL switch on the side of the camera to PRESET.
- Press the DISP CHG button several times until the following (see illustration below) display appears on the viewfinder screen.

```
 BATT     : 12.0 V
 WHITE    : PRESET
 BLACK    : AUTO
 IRIS     : STD
 GAIN     : -3dB
 DCC      : ON
 MATRIX     : STD
 SHUTTER    : 1/100
→L. L. IND     : ON
 TONE SET      : ON
```

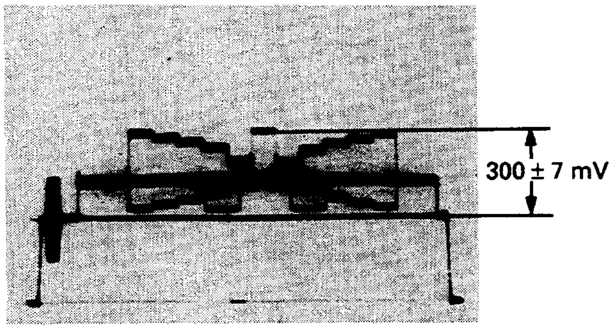
Adjustment point : ⊘RV5/AT-78 board
Adjustment :

1. Adjust the zoom control so that Grayscale chart frame matches the underscanned picture frame on the screen.



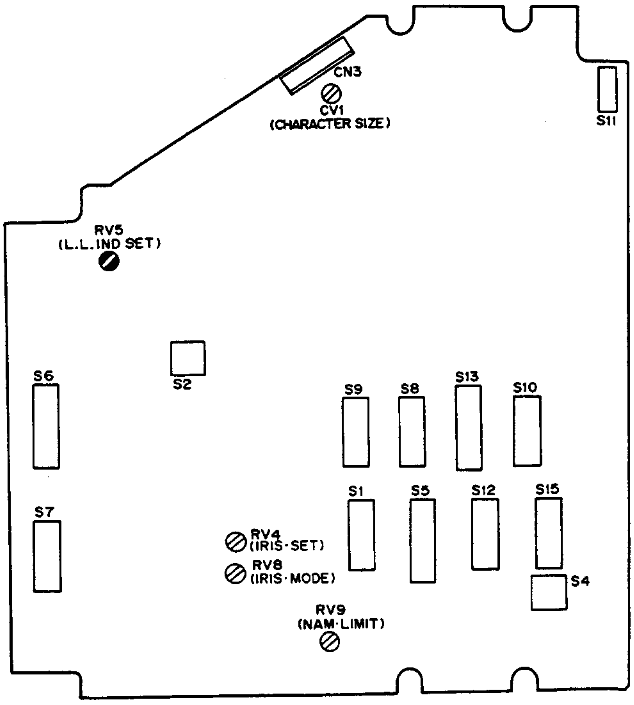
Monitor Screen

2. Adjust the lens iris control so that the white level of the video signal is 300 ± 7 mV.



3. Rotate ⊘RV5/AT-78 board slowly counterclockwise from the rightmost position until the point where the "LOW LIGHT" indication on the viewfinder screen.
4. Open the iris control gradually and confirm that the white level of the video signal is 275 ± 35 mV when the "LOW LIGHT" indication disappears. If the specification is not met, repeat procedure 3.

AT-78 BOARD —COMPONENT SIDE—



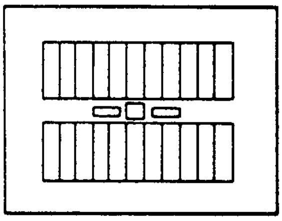
3-7-2. Auto Iris Adjustment

Object : Grayscale chart, Pattern box (white)
Equipment : Waveform monitor
Preparation :

- Set the WHITE BAL switch on the side of the camera to PRESET.
- S6 (A. IRIS MODE)/AT-78 board → STD
- Set the iris control to AUTO
- Rotate ⊘RV8 (IRIS MODE)/AT-78 board fully clockwise ↻

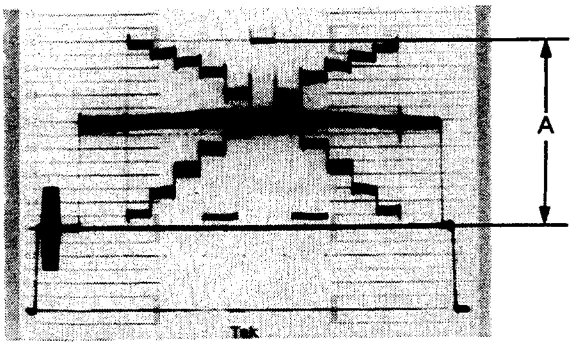
Adjustment :

1. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.

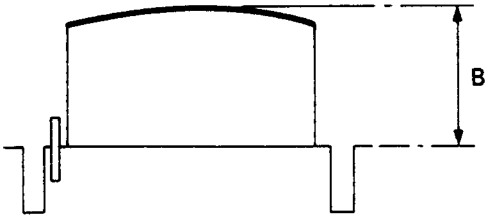


Monitor Screen

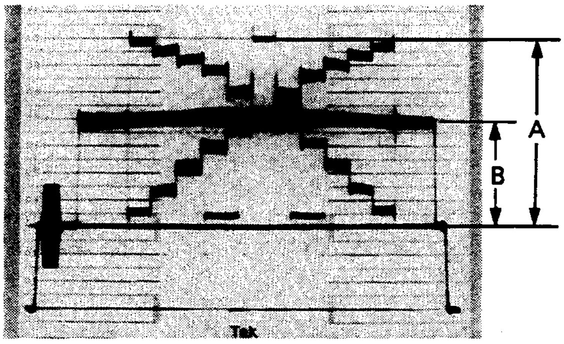
2. Adjust ⊘RV5 (IRIS SET)/AT-78 board so that the white peak level "A" is 610 ± 7 mV.
3. Adjust ⊘RV8 (IRIS MODE)/AT-78 board so that the white peak level "A" is 685 ± 7 mV.



4. Remove the grayscale from the pattern box, and image the white of the pattern box with the lens zoom set fully to TELE.
5. Make sure that the white peak level "B" is 560 ± 20 mV.

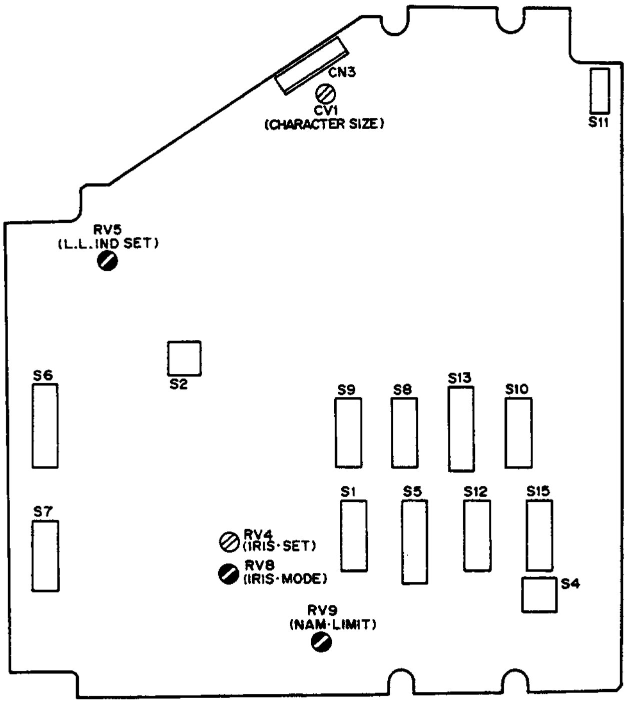


6. Set the A. IRIS MODE switch (S6)/AT-78 board to BACK L.
7. Adjust ⊘RV9/AT-78 board so that the cross point level "B" is 600 ± 7 mV.



8. Check that the peak level "A" in the figure above is 600 ± 35 mV when the A. IRIS MODE switch (S6)/AT-78 board is set to SPOT L.
9. After adjusting, return the following switch to its original setting
   - A. IRIS MODE switch (S6)/AT-78 board → STD
   - Iris control → MANUAL

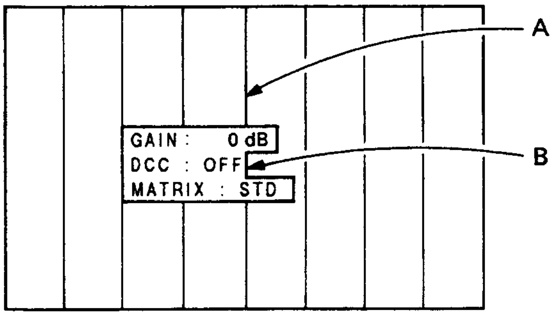
AT-78 BOARD —COMPONENT SIDE—



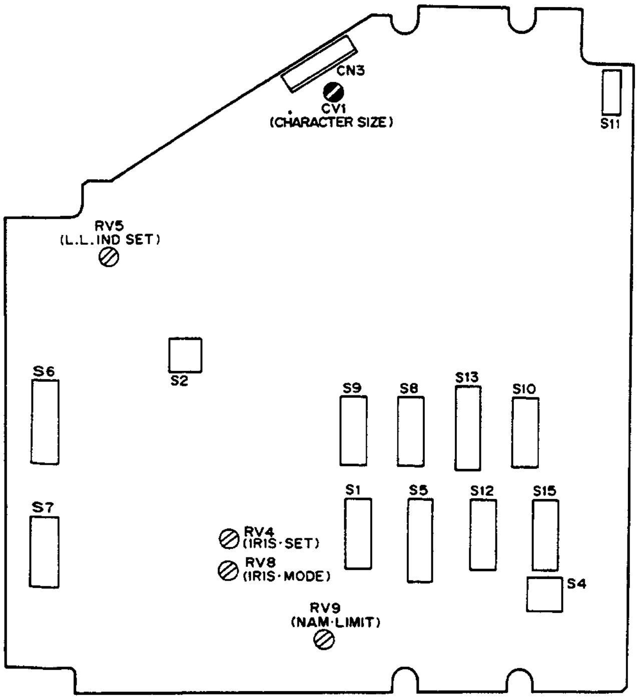
3-7-3. Character Size Adjustment

Test point : Viewfinder screen
Preparetion :
- OUTPUT switch (camera side panel) → BARS
- DISP CHG switch (camera side panel) → ON

Adjustment point : ⊘CV1/AT-78 board
Adjustment :
Adjust ⊘CV1/AT-78 board so that the "B" line on white block for character display matches the "A" line on color bar screen.


A
B
GAIN : 0 dB
DCC : OFF
MATRIX : STD

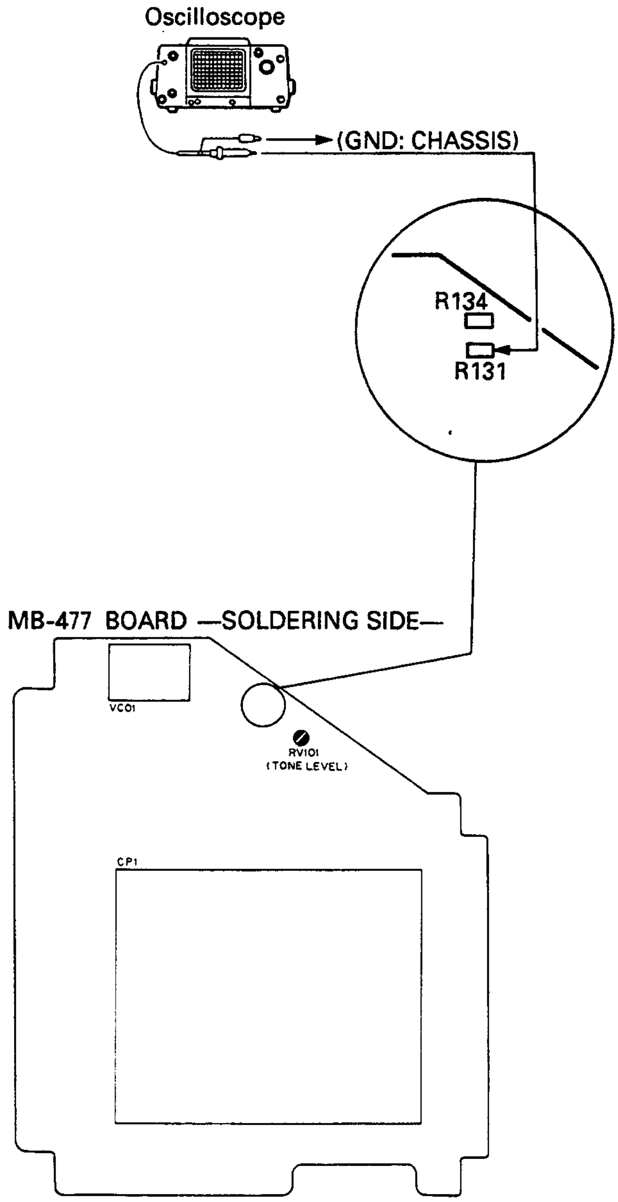
AT-78 BOARD —COMPONENT SIDE—


CN3
CV1
(CHARACTER SIZE)
S11
RV5
(L.L.IND SET)
S6
S2
S9
S8
S13
S10
S7
S1
S5
S12
S15
RV4
(IRIS·SET)
RV8
(IRIS·MODE)
S4
RV9
(NAM·LIMIT)

3-8. AUDIO SYSTEM

3-8-1. Tone Level Adjustment

Connection:


Oscilloscope
(GND: CHASSIS)
R134
R131
MB-477 BOARD —SOLDERING SIDE—
VC01
RV101
(TONE LEVEL)
CP1

Equipment : Oscilloscope

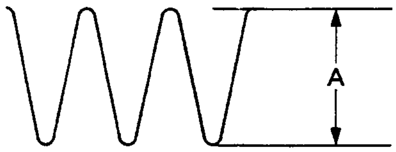
Preparation : OUTPUT switch/camera side panel → BARS

- Press the DISP CHG button several times until the following (see illustration below) display appears on the viewfinder screen. (TONE SET OFF → ON)

BATT : 12.0 V
WHITE : PRESET
BLACK : AUTO
IRIS : STD
GAIN : -3dB
DCC : ON
MATRIX : STD
SHUTTER : 1/100
→L. L. IND : ON
TONE SET : ON

Adjustment point : ⊘RV101/MB-477 board

Specification : A = 600 ± 15 mV



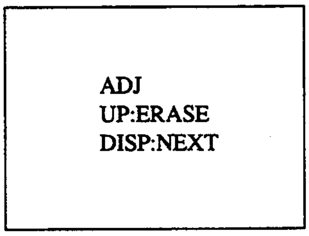
Note: After adjustment is completed, TONE SET is OFF.

3-9. Adjustment when replacing the CCD BLOCK/VA-138 board

3-9-1. ADJ Mode Description

1. S11(ADJ)/AT-78 board is ON until the following (see illustration below) display appears on the viewfinder screen.

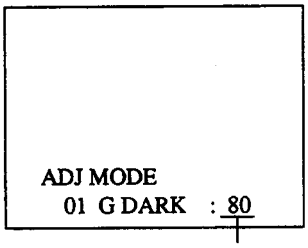
Viewfinder Screen



ADJ
UP:ERASE
DISP:NEXT

2. Press the DISP CHG button (camera side panel) until the following (See illustration bellow) display on the viewfinder screen.

Viewfinder Screen



ADJ MODE
01 G DARK : 80

Data Indication (Adjustment Value)

The ADJ mode can be changed from 01h to 15h by pressing the DISP CHG button (camera side panel) repeatedly.

[ADJ MODE]

01	G DARK
02	G BLACK1
03	R DARK
04	R BLACK1
05	B DARK
06	B BLACK1
07	G SHAD BAL
08	R SHAD BAL
09	B SHAD BAL
0A	G H SAW
0B	R H SAW
0C	B H SAW
0D	G V SAW
0E	R V SAW
0F	B V SAW
10	G VA GAIN
11	R VA GAIN
12	B VA GAIN
13	M PRE KNEE
14	R PRE KNEE
15	B PRE KNEE

<On data indication (adjustment value)>

The data indication (adjustment value) is changed from "00" to "FF" by pressing the UP or DOWN button (camera front panel).
(The adjustment value changes in the same manner as the signal level which is changed when the general VR is turned.)

UP/DOWN buttons	Data indication (adjustment value)	Position of general VR
DOWN	00h	Minimum
↕	80h	Mechanical center
UP	FFh	Maximum

[Pre-adjustment]

The data indication (adjustment value) "80h" can be set by pressing the UP/DOWN buttons simultaneously.

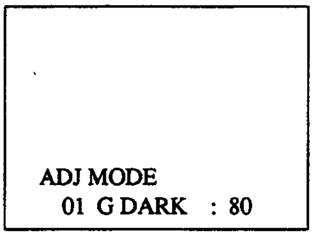
3-9-2. Black Set Adjustment

Lens Iris : Close "C"
Equipment : Oscilloscope
To be extended : VA-138 board
Preparation : S11(ADJ)/AT-78 board → ON

Adjustment :

1. Press the DISP CHG button (Camera side panel) until the following (See illustration below) display appears on the viewfinder screen.

Viewfinder Screen

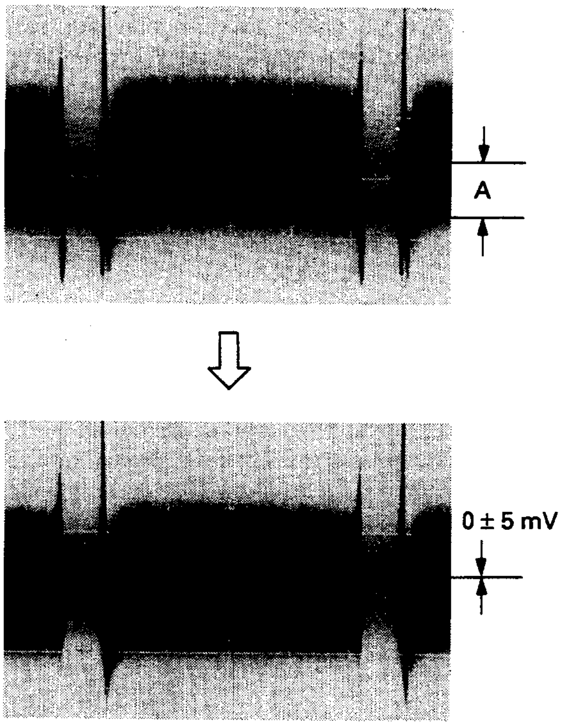


ADJ MODE
01 G DARK : 80

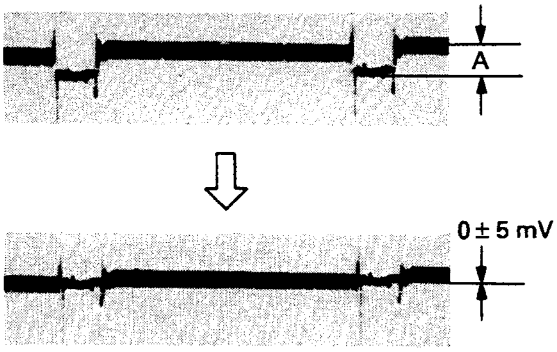
2. In the following setting, adjust in order of G ch, R ch, and B ch.

	Test Point /PR-180	ADJ Mode (Indication)	GAIN SW (Camera side panel)
G	TP7	G DARK	18 dB (High)
		G BLACK1	0 dB (Low)
R	TP3	R DARK	18 dB (High)
		R BLACK1	0 dB (Low)
B	TP11	B DARK	18 dB (High)
		B BLACK1	0 dB (Low)

3. Set the ADJ mode to DARK and adjust so that the waveform level "A" of the oscilloscope is 0±5 mV when the GAIN switch level is 18 dB by pressing the UP/DOWN buttons (camera front panel).



4. Set the ADJ mode to BLACK 1 and adjust so that the waveform level "A" of the oscilloscope becomes 0±5 mV when the GAIN switch level is 0 dB by pressing the UP/DOWN buttons on the (camera front panel).



5. Repeat steps 3 and 4, and check that the level does not fluctuates even though the GAIN switch position is changed from 0 dB to 18 dB vice versa.

6. Adjust R ch and B ch in the same procedure as above.

7. After adjustment, return the GAIN switch position on the side of the camera to 0dB and set the S11(ADJ)/AT-78 board to OFF.

3-9-3. Shading Balance Adjustment

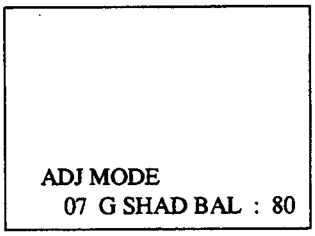
Lens Iris	: Close "C"
Equipment	: Oscilloscope
Trigger	: pin A5/extention board
Preparation	:

- S11(ADJ)/AT-78 board → ON
- Set the data indication (adjustment value) on the viewfinder screen in the ADJ mode to "FFh".

Adjustment :

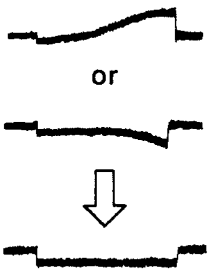
1. Press the DISP CHG button (camera side panel) until the following (see illustration bellow) display appears on the viewfinder screen.

Viewfinder Screen



ADJ MODE
07 G SHAD BAL : 80

2. While pressing the UP/DOWN buttons on (camera front panel), adjust so that the waveform of the oscilloscope becomes flat in order of G ch, R ch, and B ch.

	Test Point	ADJ MODE/ (Indication)	Spec.
G	TP12 /IE-40	G SHAD BAL	
R	TP1 /PR-180	R SHAD BAL	
B	TP9 /PR-180	B SHAD BAL	

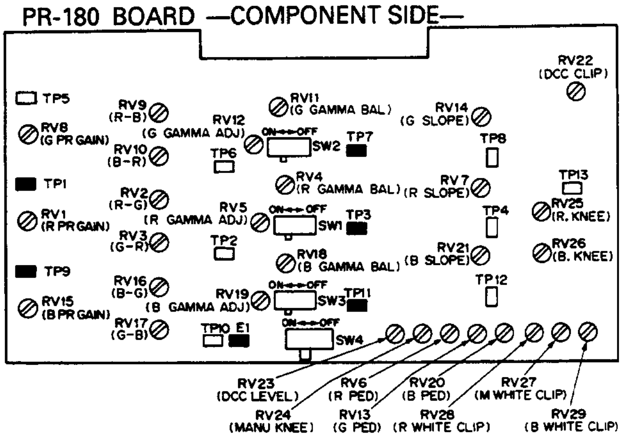
3. After adjustment, set the data indication (adjustment value) on the viewfinder screen in the ADJ mode from "FFh" to "80h".

G H SAW : 80
R H SAW : 80
B H SAW : 80

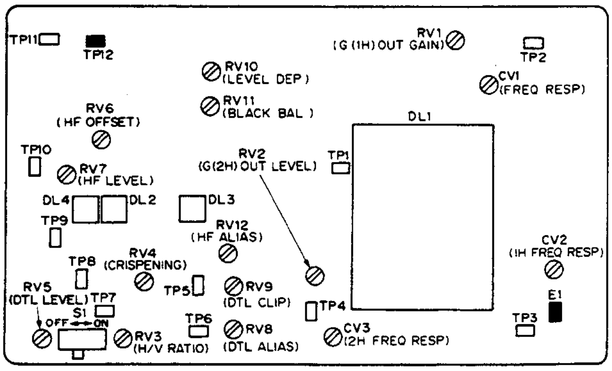
(The data indication can be set to "80h" by pressing the UP/DOWN buttons (camera front panel) simultaneously.)

Note: After adjustment is completed, perform the item 3-9-4. While Shading Adjustment.

PR-180 BOARD —COMPONENT SIDE—


RV22 (DCC CLIP)
TP5
RV9 (R-B)
RV11 (G GAMMA BAL)
RV14 (G SLOPE)
RV8 (G PR GAIN)
RV12 (G GAMMA ADJ)
ON↔OFF
SW2
TP7
TP8
RV10 (B-R)
TP6
TP1
RV4 (R GAMMA BAL)
RV7 (R SLOPE)
TP13
RV2 (R-G)
RV5 (R GAMMA ADJ)
SW1
TP3
TP4
RV25 (R. KNEE)
RV1 (R PR GAIN)
RV3 (G-R)
TP2
RV18 (B GAMMA BAL)
RV21 (B SLOPE)
RV26 (B. KNEE)
TP9
RV16 (B-G)
TP12
RV19 (B GAMMA ADJ)
SW3
TP11
RV15 (B PR GAIN)
RV17 (G-B)
TP10 E1
SW4
RV23 (DCC LEVEL)
RV6 (R PED)
RV20 (B PED)
RV27 (M WHITE CLIP)
RV24 (MANU KNEE)
RV13 (G PED)
RV28 (R WHITE CLIP)
RV29 (B WHITE CLIP)

IE-40 BOARD —COMPONENT SIDE—


TP11
TP12
RV1 (G (1H) OUT GAIN)
TP2
RV10 (LEVEL DEP)
CV1 (FREQ RESP)
RV11 (BLACK BAL)
RV6 (HF OFFSET)
DL1
TP10
RV7 (HF LEVEL)
RV2 (G(2H) OUT LEVEL)
TP1
DL4
DL2
DL3
TP9
RV12 (HF ALIAS)
CV2 (1H FREQ RESP)
TP8
RV4 (CRISPENING)
RV5 (DTL LEVEL)
TP7
TP5
RV9 (DTL CLIP)
TP4
E1
S1
OFF↔ON
TP6
TP3
RV3 (H/V RATIO)
RV8 (DTL ALIAS)
CV3 (2H FREQ RESP)

3-9-4. White Shading Adjustment

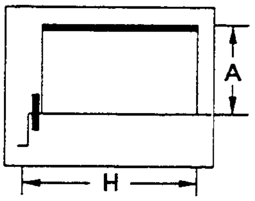
Note: The item 3-9-3. must be done before this adjustment.

Objuct : White portion of pattern box
Equipment : Oscilloscope, Waveform monitor
To be extended : VA-138 board
Preparation : S11(ADJ)/AT-78 board → ON

Adjustment :

1. Shoot the center portion of the pattern box by zooming the lens to fully telephoto position.
2. Adjust the iris control so that the level "A" is 490± 14mV.

Waveform monitor



3. Press the DISP CHG button (Camera side panel) until the following (see illustration below) display appears on the viewfinder screen.

Viewfinder Screen

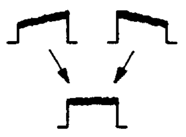
ADJ MODE
0A GHSAW : 80

4. In the following ADJ mode, adjust so that the waveform of the oscilloscope becomes flat by pressing the UP/DOWN buttons (camera front panel).

① Connect CH-1 of oscilloscope to TP8(G)/PR-180 board, and adjust so that the waveform becomes flat.

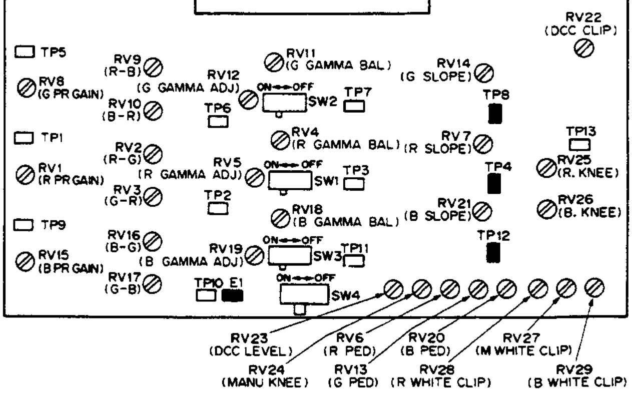
② Connect CH-1 of oscilloscope to TP8(G)/PR-180 board and connect CH-2 of oscilloscope to TP4 (R)/PR-180 board. Set the oscilloscope to ADD mode and CH-2 INVERT mode. Adjust so that the waveform becomes flat.

③ Connect CH-1 of oscilloscope to TP8(G)/PR-180 board and connect CH-2 of oscilloscope to TP12(B)/PR-180 board. Set the oscilloscope to ADD mode and CH-2 INVERT made. Adjust so that the waveform becomes flat mode.

ADJ mode (Indication) / Test point /PR-180		G H SAW R H SAW B H SAW	G V SAW R V SAW B V SAW
G	TP8		
R	TP4		
B	TP12		

5. After adjustment, set S11(ADJ)/AT-78 board to OFF.

PR-180 BOARD —COMPONENT SIDE—


RV22 (DCC CLIP)
TP5
RV9 (R-B)
RV11 (G GAMMA BAL)
RV14 (G SLOPE)
RV8 (G PR GAIN)
RV12 (G GAMMA ADJ)
ON⟷OFF
SW2
TP7
TP8
RV10 (B-R)
TP6
TP1
RV4 (R GAMMA BAL)
RV7 (R SLOPE)
TP13
RV2 (R-G)
RV1 (R PR GAIN)
RV5 (R GAMMA ADJ)
ON⟷OFF
SW1
TP3
TP4
RV25 (R. KNEE)
RV3 (G-R)
TP2
RV18 (B GAMMA BAL)
RV21 (B SLOPE)
RV26 (B. KNEE)
TP9
RV16 (B-G)
TP12
RV15 (B PR GAIN)
RV19 (B GAMMA ADJ)
ON⟷OFF
SW3
TP11
RV17 (G-B)
TP10 E1
ON⟷OFF
SW4
RV23 (DCC LEVEL)
RV6 (R PED)
RV20 (B PED)
RV27 (M WHITE CLIP)
RV24 (MANU KNEE)
RV13 (G PED)
RV28 (R WHITE CLIP)
RV29 (B WHITE CLIP)

3-9-5. PRE KNEE Adjustment

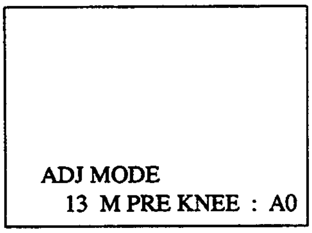
Object : Grayscale chart
Equipment : Oscilloscope
To be extended : VA-138 board
Preparation :

- S11(ADJ)/AT-78 board → ON
- Output switch/camera side panel → CAM (DCC OFF)

Adjustment :

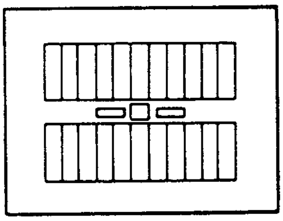
1. Press the DISP CHG switch (camera side panel) and display the following indication on the viewfinder screen. Press the UP/DOWN buttons (camera front panel) and set the data indication (adjustment value) to "A0h".

Viewfinder Screen



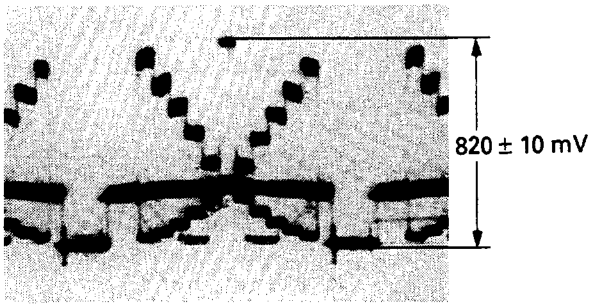
ADJ MODE
13 M PRE KNEE : A0

2. Adjust the zoom control so that the Grayscale chart frame matches the underscanned picture frame on the screen.

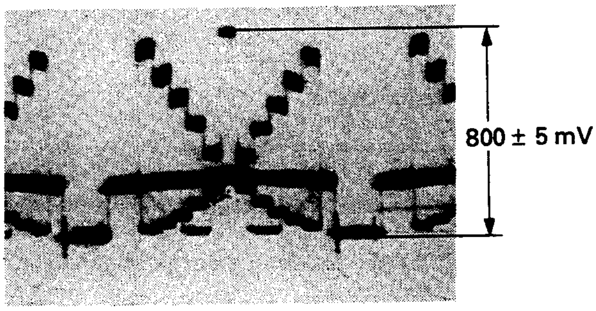


Monitor Screen

3. Adjust the lens iris control so that the white level of the video level is 820±10mV.

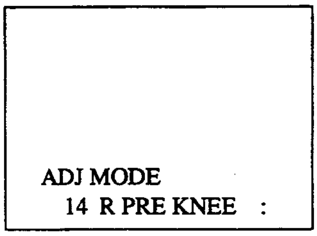


4. Press the UP/DOWN buttons (camera front panel) so that the video level at TP5 (GND:E1)/PR-180 board is 800±5mV.



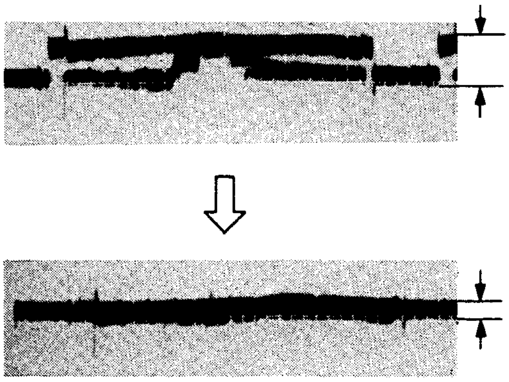
5. GAIN switch (camera side panel) → MID (9dB).
6. Connect the CH-2 of oscilloscope to TP5(GND:E1)/PR-180 board. And set the oscilloscope to ADD mode and CH-2 INVERT mode.
7. Connect the CH-2 of oscilloscope to TP1 (GND:E1)/PR-180 board.
8. Press the DISP CHG switch (camera side panel) once and display "14 R PRE KNEE" of the ADJ mode.

Viewfinder Screen



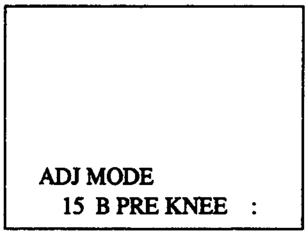
ADJ MODE
14 R PRE KNEE :

9. Press the UP/DOWN buttons (camera front panel) so that the waveform is flat.



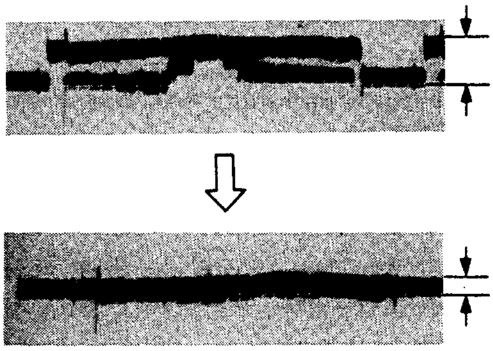
10. Press the DISP CHG switch (camera side panel) once and display "15 B PRE KNEE" of the ADJ mode.

Viewfinder Screen



ADJ MODE
15 B PRE KNEE :

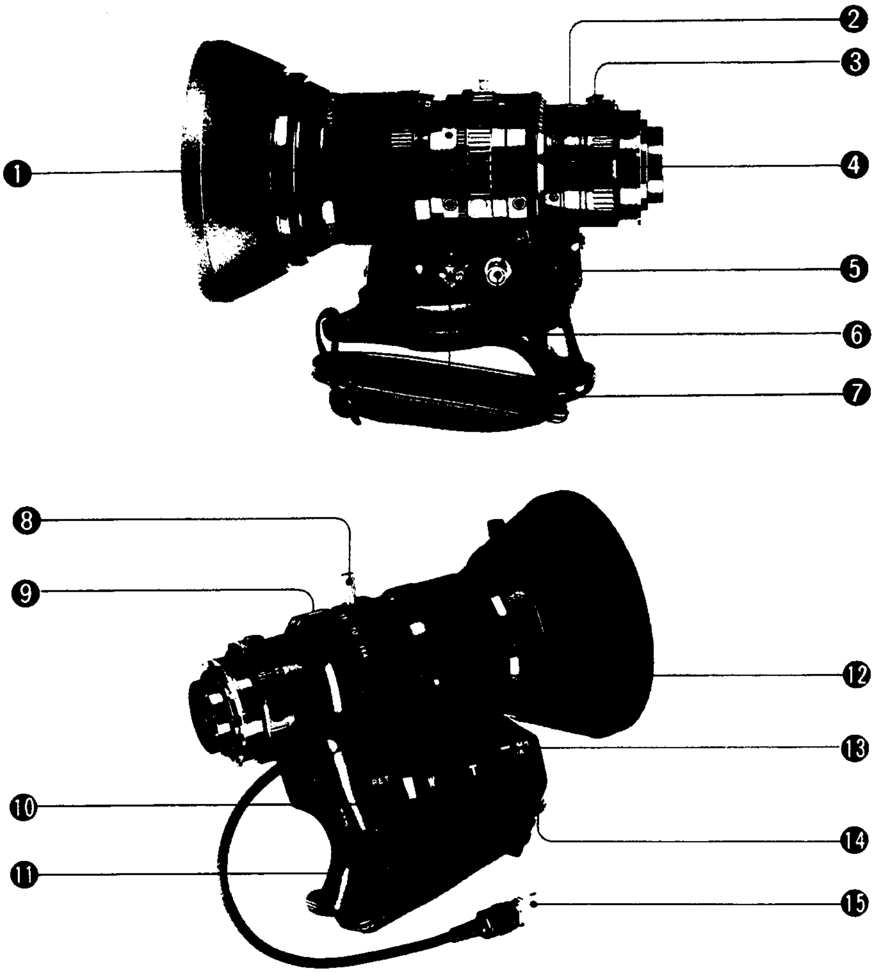
11. Connect the CH-2 of oscilloscope to TP9(GND:E1)/PR-180 board.
Press the UP/DOWN buttons (camera front panel) so that the waveform is flat.



12. After adjustment, set S11(ADJ)/AT-78 board to OFF.

VCL-916BYA

The Sony VCL-916BYA is a 16x zoom lens designed for use with a Sony 2/3-inch CCD color video camera.
Please refer to the camera's instruction manual when using the lens.



Location and Function of Parts and Controls

❶ Focus ring

❷ Ff (flange focal length) adjustment ring

❸ MACRO (close-up) button

❹ MACRO (close-up) ring
For close-up, set the focus ring to the 0.9 position, and while sliding the MACRO button, turn this ring fully in the direction of the arrow. Set the ZOOM selector to M and focus with the zoom lever.

❺ Zoom remote control connector (8-pin)
Connect the optional LO-23 lens remote control unit for remote control of zooming.

❻ Focus remote control connector (3-pin)
Connect a commercially available device for remote control of focusing.

❼ ZOOM selector

❽ Zoom lever

❾ Iris ring

❿ RET (return video) button
Keep this button depressed to monitor the E-E picture from the connected VTR on the viewfinder. Release the button to monitor the camera picture.
When a camera control unit is connected, keep this button depressed to monitor the return video, and release the button to monitor the camera picture.

⓫ VTR button
Press this button to start and stop recording.
When a camera control unit is connected, keep this button depressed to monitor the return video, and release the button to monitor the camera picture.

⓬ Motorized zoom switch

⓭ IRIS selector

⓮ Instant automatic iris adjustment button

⓯ Lens connector (12-pin)

Specifications

Focal length	9.0 to 144 mm
Zoom	Manual and motorized, selectable Zooming ratio: 16×
Maximum aperture ratio	1 : 1.8
Iris control	Manual and auto, selectable 1.8 to 16 and C (closed)
Range of object field (at the distance of 0.9 m)	W (wide angle): 815 × 611 mm (32 1/8 × 24 1/8 inches) T (telephoto): 51 × 38 mm (2 1/8 × 1 1/2 inches)
Minimum object distance	0.9 m
Filter thread	77 mm dia. 0.75 pitch
Mount	Bayonet mount
Dimensions	120 × 214.2 mm (dia./length) (4 3/4 × 8 1/2 inches) incl. projecting parts and lens hood
Mass	Approx. 1.2 kg (2 lb 10 oz) without lens hood
Supplied accessory	Operating instructions (1)

Design and specifications are subject to change without notice.

SONY®

V13543

カラービデオカメラ

COLOR VIDEO CAMERA

DXC-537A/537AP

ズームレンズ

ZOOM LENS

VCL-916BYA

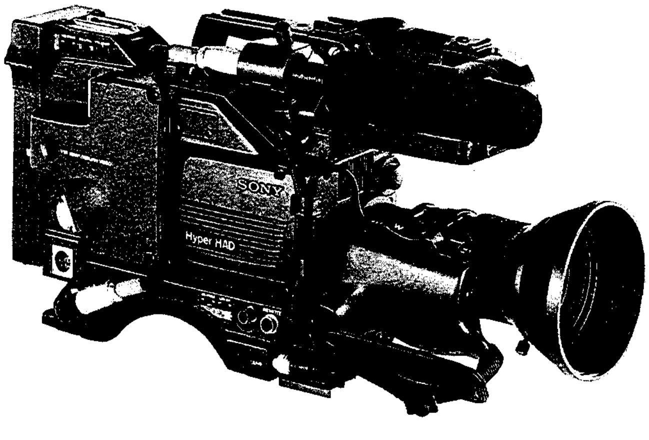
三脚アタッチメント

TRIPOD ATTACHMENT

VCT-14

SERVICE MANUAL

Vol. 2 (1st Edition)



Hyper HAD™

SAFETY RELATED COMPONENT WARNING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

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エレクトロニックビューファインダー DXF-501のサービス情報については、別途発行のDXF-501のサービスマニュアル（9-977-201-01）および、補修部品表（9-977-201-71）をご覧ください。

カメラマイクホルダー CAC-12の補修部品については、別途発行のCAC-12の部品価格表（9-967-251-71）をご覧ください。

On service information for the DXF-501/501CE electronic viewfinder, please see the DXF-501/501CE service manual (9-977-201-01) available separately.

On service information for the CAC-12 microphone holder, please see the CAC-12 service manual (9-967-252-01) available separately.

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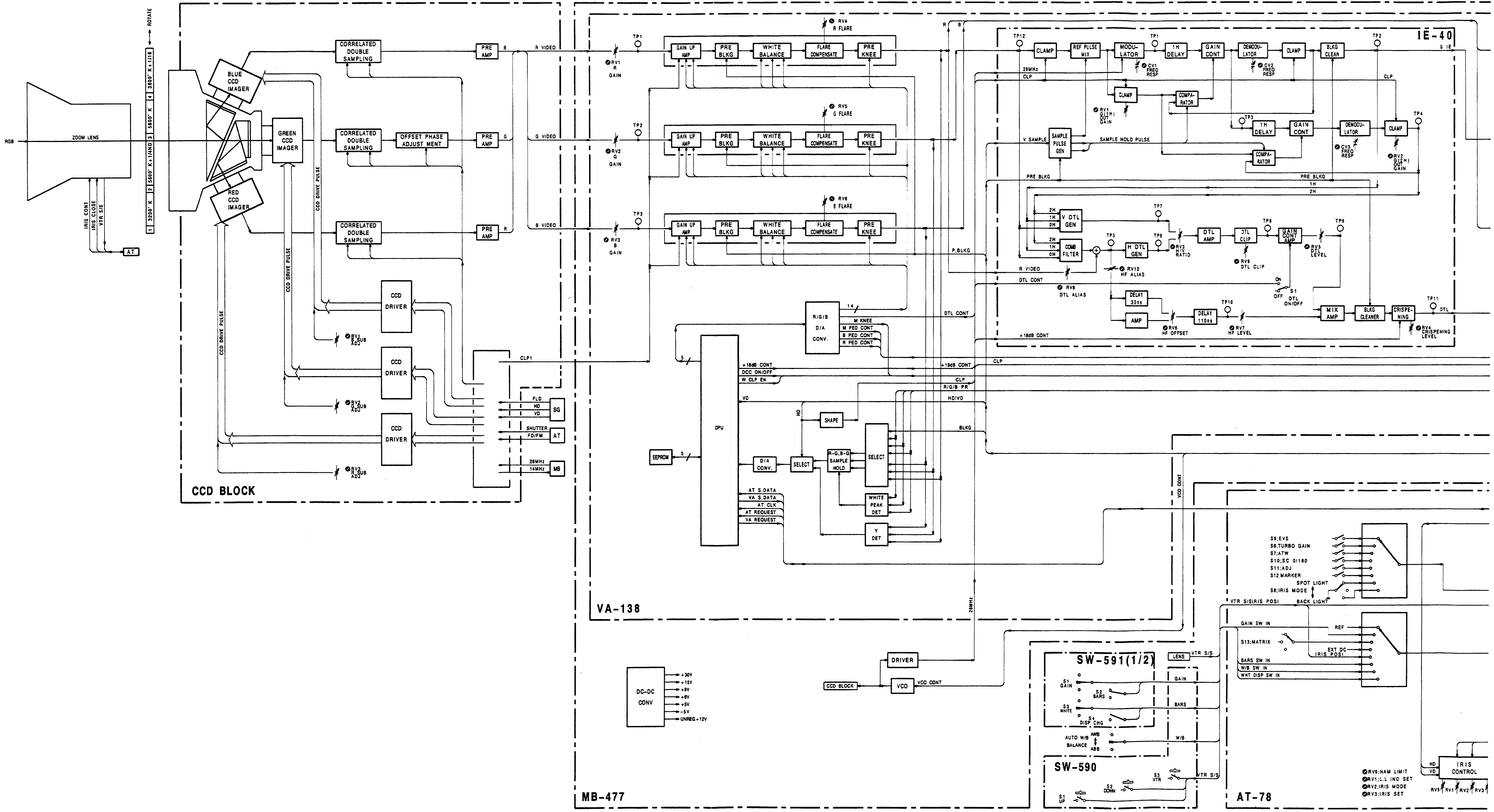
VCL-916BYA
VCT-14

EXPLODED VIEW

SECTION A
BLOCK DIAGRAMS

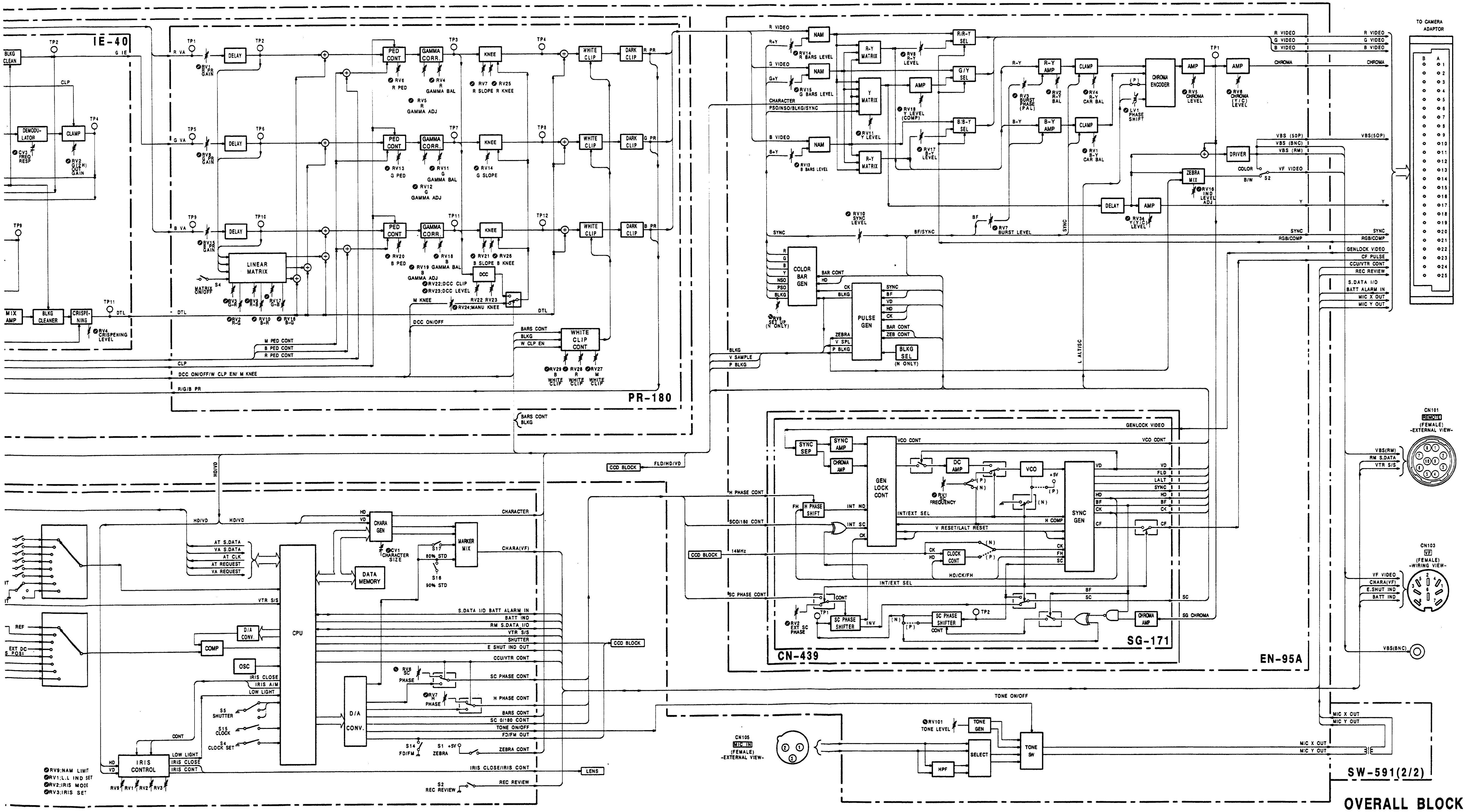
CCD BLOCK


RGB
ZOOM LENS
IRIS CONT
IRIS CLOSE
VTR S/S
AT
ROTATE
1 3200° K
2 5600° K+1/4ND
3 5600° K
4 3600° K+1/16
BLUE CCD IMAGER
GREEN CCD IMAGER
RED CCD IMAGER
CORRELATED DOUBLE SAMPLING
OFFSET PHASE ADJUST MENT
PRE AMP
R VIDEO
G VIDEO
B VIDEO
CCD DRIVE PULSE
CCD DRIVER
RV1 R SUB ADJ
RV2 G SUB ADJ
RV3 B SUB ADJ
CLP1
FLD
HD
VD
SG
SHUTTER
FD/FM
AT
28MHz
14MHz
MB
CCD BLOCK
TP1
TP2
TP3
RV1 R GAIN
RV2 G GAIN
RV3 B GAIN
RV4 R FLARE
RV5 G FLARE
RV6 B FLARE
GAIN UP AMP
PRE BLKG
WHITE BALANCE
FLARE COMPENSATE
PRE KNEE
R/G/B D/A CONV.
M KNEE
M PED CONT
B PED CONT
R PED CONT
CPU
EEPROM
+18dB CONT
DCC ON/OFF
W CLP EN
VD
AT S.DATA
VA S.DATA
AT CLK
AT REQUEST
VA REQUEST
HD
SHAPE
D/A CONV.
SELECT
R-G.B-G SAMPLE HOLD
SELECT
WHITE PEAK DET
Y DET
DTL CONT
+18dB CONT
CLP
R/G/B PR
HD/VD
BLKG
P.BLKG
VA-138
IE-40
TP12
CLAMP
REF PULSE MIX
MODU-LATOR
CV1 FREQ RESP
1H DELAY
GAIN CONT
DEMODU-LATOR
CV2 FREQ RESP
BLKG CLEAN
28MHz
CLP
RV1 G(1H) OUT GAIN
COMPA-RATOR
TP3
TP4
CV3 FREQ RESP
RV2 G(2H) OUT GAIN
V SAMPLE
SAMPLE PULSE GEN
SAMPLE HOLD PULSE
PRE BLKG
1H
2H
0H
V DTL GEN
COMB FILTER
H DTL GEN
TP5
TP6
TP7
TP8
TP9
RV3 H/V RATIO
DTL AMP
DTL CLIP
RV9 DTL CLIP
GAIN CONT AMP
RV5 DTL LEVEL
R VIDEO
RV12 HF ALIAS
RV8 DTL ALIAS
DTL CONT
S1 DTL ON/OFF
DELAY 30ns
AMP
TP10
DELAY 110ns
RV6 HF OFFSET
RV7 HF LEVEL
MIX AMP
BLKG CLEANER
CRISPE-NING
TP11
DTL
RV4 CRISPENING LEVEL
+18dB CONT
CLP
VCO CONT
28MHz
DRIVER
CCD BLOCK
VCO
VCO CONT
DC-DC CONV
+30V
+15V
+9V
+6V
+5V
-5V
UNREG+12V
MB-477
SW-591(1/2)
LENS
VTR S/S
S1 GAIN
S2 BARS
S3 WHITE
S4 DISP CHG
GAIN
BARS
W/B
AUTO W/B BALANCE
AWB
ABB
SW-590
S1 UP
S2 DOWN
S3 VTR
VTR S/S
AT-78
S9;EVS
S8;TURBO GAIN
S7;ATW
S10;SC 0/180
S11;ADJ
S12;MARKER
SPOT LIGHT
S6;IRIS MODE
VTR S/SIRIS POSI
BACK LIGHT
GAIN SW IN
S13;MATRIX
REF
EXT DC
IRIS POSI
BARS SW IN
W/B SW IN
WHT DISP SW IN
RV9;NAM LIMIT
RV1;L.L IND SET
RV2;IRIS MODE
RV3;IRIS SET
HD
VD
IRIS CONTROL
RV9
RV1
RV2
RV3

DXC-537A (J,UC)
DXC-537AP(EK)

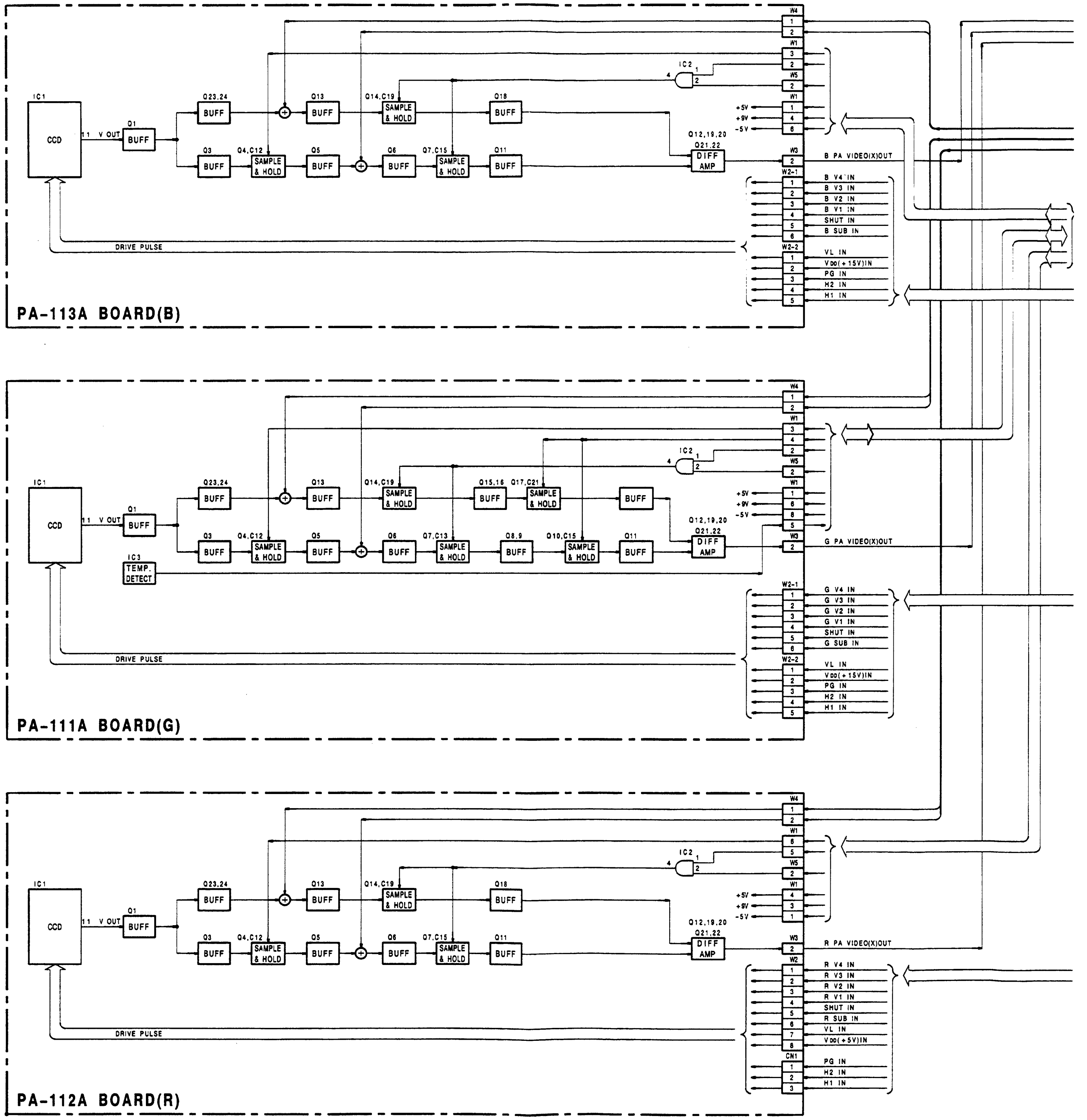
A-1

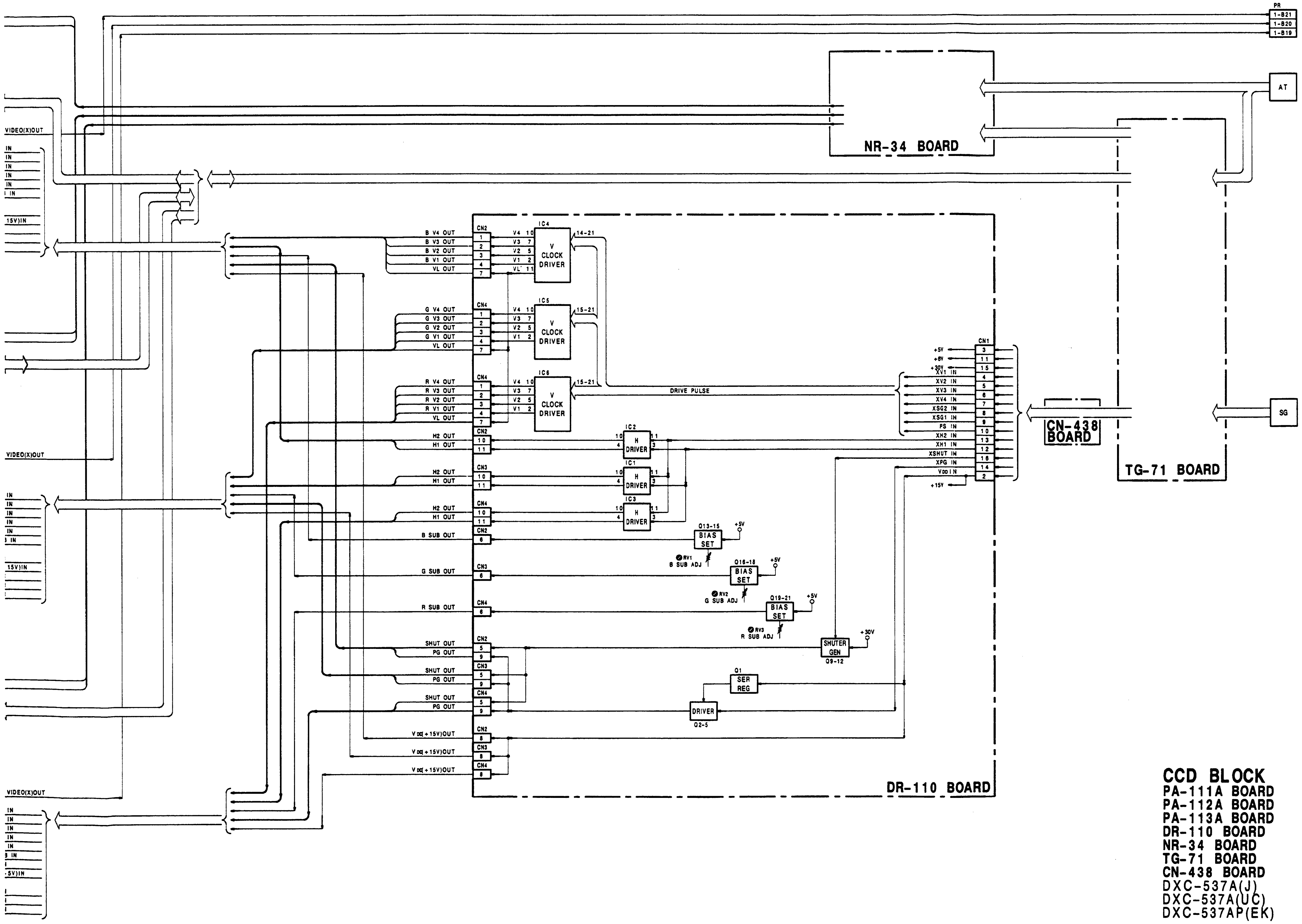
A-1


IE-40
PR-180
EN-95A
CN-439
SG-171
SW-591(2/2)
TO CAMERA ADAPTOR
BLKG CLEAN
DEMODU-LATOR
CLAMP
MIX AMP
BLKG CLEANER
CRISPE-NING
DELAY
LINEAR MATRIX
PED CONT
GAMMA CORR.
KNEE
WHITE CLIP
DARK CLIP
DCC
WHITE CLIP CONT
NAM
R-Y MATRIX
Y MATRIX
R/R-Y SEL
G/Y SEL
B/B-Y SEL
R-Y AMP
B-Y AMP
CHROMA ENCODER
AMP
DRIVER
ZEBRA MIX
COLOR BAR GEN
PULSE GEN
BLKG SEL
SYNC SEP
SYNC AMP
CHROMA AMP
GEN LOCK CONT
DC AMP
VCO
SYNC GEN
H PHASE SHIFT
CLOCK CONT
SC PHASE SHIFTER
CHARA GEN
MARKER MIX
DATA MEMORY
CPU
D/A CONV
COMP
OSC
D/A CONV.
IRIS CONTROL
TONE GEN
TONE SW
SELECT
HPF
CCD BLOCK
LENS
CN101 REMOTE (FEMALE) -EXTERNAL VIEW-
CN103 VF (FEMALE) -WIRING VIEW-
CN105 MIC IN (FEMALE) -EXTERNAL VIEW-
R VIDEO
G VIDEO
B VIDEO
CHROMA
VBS(50P)
Y
SYNC
RGB/COMP
GENLOCK VIDEO
CF PULSE
CCU/VTR CONT
REC REVIEW
S.DATA I/O
BATT ALARM IN
MIC X OUT
MIC Y OUT
VF VIDEO
CHARA(VF)
E.SHUT IND
BATT IND
VBS(BNC)
RV9:NAM LIMIT
RV1:L.L IND SET
RV2:IRIS MODE
RV3:IRIS SET
1
2
3
4
5
I
J
K
L
M
N
O
P

OVERALL BLOCK
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

CCD BLOCK

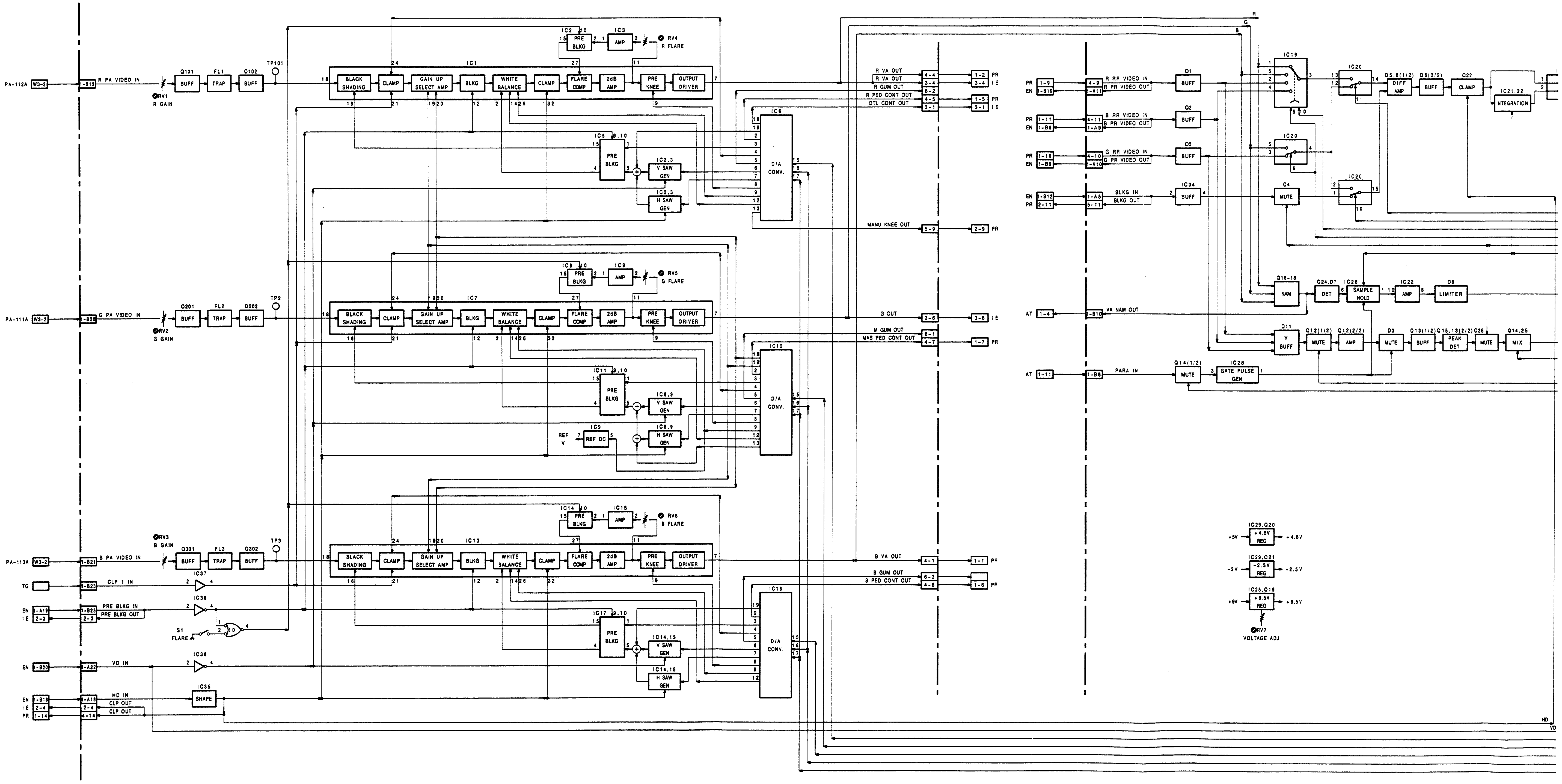

IC1
CCD
11 V OUT
Q1
BUFF
Q23,24
BUFF
Q13
BUFF
Q14,C19
SAMPLE & HOLD
Q18
BUFF
Q3
BUFF
Q4,C12
SAMPLE & HOLD
Q5
BUFF
Q6
BUFF
Q7,C15
SAMPLE & HOLD
Q11
BUFF
Q12,19,20
Q21,22
DIFF AMP
IC2
DRIVE PULSE
W4
W1
W5
W3
W2-1
W2-2
+5V
+9V
-5V
B PA VIDEO(X)OUT
B V4 IN
B V3 IN
B V2 IN
B V1 IN
SHUT IN
B SUB IN
VL IN
VDD(+15V)IN
PG IN
H2 IN
H1 IN
PA-113A BOARD(B)
Q15,16
Q17,C21
Q7,C13
Q8,9
Q10,C15
IC3
TEMP. DETECT
G PA VIDEO(X)OUT
G V4 IN
G V3 IN
G V2 IN
G V1 IN
G SUB IN
PA-111A BOARD(G)
W2
CN1
R PA VIDEO(X)OUT
R V4 IN
R V3 IN
R V2 IN
R V1 IN
R SUB IN
VDD(+5V)IN
PA-112A BOARD(R)


PR
1-B21
1-B20
1-B19
AT
NR-34 BOARD
TG-71 BOARD
SG
CN-438 BOARD
DR-110 BOARD
VIDEO(X)OUT
IN
IN
IN
IN
IN
IN
15V)IN
VIDEO(X)OUT
IN
IN
IN
IN
IN
IN
15V)IN
VIDEO(X)OUT
IN
IN
IN
IN
IN
IN
·5V)IN
CN2
B V4 OUT
B V3 OUT
B V2 OUT
B V1 OUT
VL OUT
IC4
V4 10
V3 7
V2 5
V1 2
VL' 11
V CLOCK DRIVER
14-21
CN4
G V4 OUT
G V3 OUT
G V2 OUT
G V1 OUT
VL OUT
IC5
V CLOCK DRIVER
15-21
CN4
R V4 OUT
R V3 OUT
R V2 OUT
R V1 OUT
VL OUT
IC6
V CLOCK DRIVER
15-21
DRIVE PULSE
CN2
H2 OUT
H1 OUT
IC2
H DRIVER
CN3
H2 OUT
H1 OUT
IC1
H DRIVER
CN4
H2 OUT
H1 OUT
IC3
H DRIVER
CN2
B SUB OUT
Q13-15
BIAS SET
+5V
RV1
B SUB ADJ
CN3
G SUB OUT
Q16-18
BIAS SET
+5V
RV2
G SUB ADJ
CN4
R SUB OUT
Q19-21
BIAS SET
+5V
RV3
R SUB ADJ
CN2
SHUT OUT
PG OUT
CN3
SHUT OUT
PG OUT
CN4
SHUT OUT
PG OUT
SHUTER GEN
Q9-12
+30V
Q1
SER REG
DRIVER
Q2-5
CN2
VDD(+15V)OUT
CN3
VDD(+15V)OUT
CN4
VDD(+15V)OUT
CN1
+5V 3
+6V 11
+30V 15
XV1 IN 4
XV2 IN 5
XV3 IN 6
XV4 IN 7
XSG2 IN 8
XSG1 IN 9
PS IN 10
XH2 IN 13
XH1 IN 12
XSHUT IN 16
XPG IN 14
VDD IN 2
+15V

CCD BLOCK
PA-111A BOARD
PA-112A BOARD
PA-113A BOARD
DR-110 BOARD
NR-34 BOARD
TG-71 BOARD
CN-438 BOARD
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

B-4DXC537A-CCDBLOCK/M

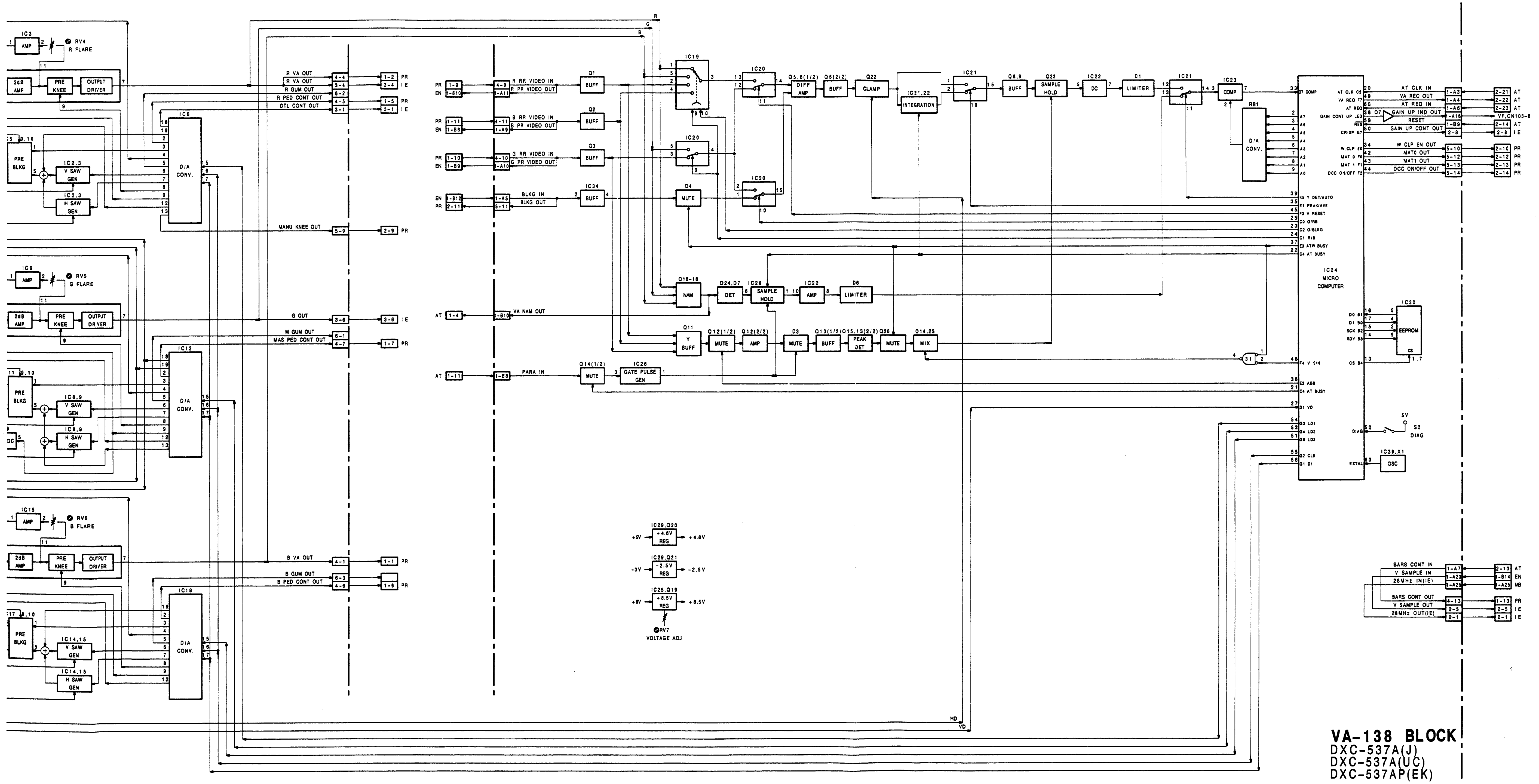
VA-138 BLOCK


PA-112A W3-2
1-B19 R PA VIDEO IN
RV1 R GAIN
Q101 BUFF
FL1 TRAP
Q102 BUFF
TP101
IC1
BLACK SHADING
CLAMP
GAIN UP SELECT AMP
BLKG
WHITE BALANCE
FLARE COMP
2dB AMP
PRE KNEE
OUTPUT DRIVER
IC2 PRE BLKG
IC3 AMP
RV4 R FLARE
IC5 PRE BLKG
IC2,3 V SAW GEN
IC2,3 H SAW GEN
IC6 D/A CONV.
R VA OUT
R VA OUT
R GUM OUT
R PED CONT OUT
DTL CONT OUT
MANU KNEE OUT
PA-111A W3-2
1-B20 G PA VIDEO IN
RV2 G GAIN
Q201 BUFF
FL2 TRAP
Q202 BUFF
TP2
IC7
IC8 PRE BLKG
IC9 AMP
RV5 G FLARE
IC11 PRE BLKG
IC8,9 V SAW GEN
IC8,9 H SAW GEN
IC9 REF DC
REF V
IC12 D/A CONV.
G OUT
M GUM OUT
MAS PED CONT OUT
PA-113A W3-2
1-B21 B PA VIDEO IN
RV3 B GAIN
Q301 BUFF
FL3 TRAP
Q302 BUFF
TP3
IC13
IC14 PRE BLKG
IC15 AMP
RV6 B FLARE
IC17 PRE BLKG
IC14,15 V SAW GEN
IC14,15 H SAW GEN
IC18 D/A CONV.
B VA OUT
B GUM OUT
B PED CONT OUT
TG
1-B23 CLP 1 IN
IC37
EN 1-A19
IE 2-3
PRE BLKG IN
PRE BLKG OUT
IC38
S1 FLARE
EN 1-B20
1-A22 VD IN
IC36
EN 1-B18
IE 2-4
PR 1-14
HD IN
CLP OUT
CLP OUT
IC35 SHAPE
PR IE
R RR VIDEO IN
R PR VIDEO OUT
B RR VIDEO IN
B PR VIDEO OUT
G RR VIDEO IN
G PR VIDEO OUT
BLKG IN
BLKG OUT
Q1 BUFF
Q2 BUFF
Q3 BUFF
IC34 BUFF
Q4 MUTE
IC19
IC20
Q5,6(1/2) DIFF AMP
Q8(2/2) BUFF
Q22 CLAMP
IC21,22 INTEGRATION
AT 1-4
5-B10 VA NAM OUT
Q16-18 NAM
Q24,D7 DET
IC26 SAMPLE HOLD
IC22 AMP
D8 LIMITER
Q11 Y BUFF
Q12(1/2) MUTE
Q12(2/2) AMP
D3 MUTE
Q13(1/2) BUFF
Q15,13(2/2) PEAK DET
Q26 MUTE
Q14,25 MIX
AT 1-11
1-B8 PARA IN
Q14(1/2) MUTE
IC28 GATE PULSE GEN
IC29,Q20 +4.6V REG
+5V +4.6V
IC29,Q21 -2.5V REG
-3V -2.5V
IC25,Q19 +8.5V REG
+9V +8.5V
RV7 VOLTAGE ADJ
HD
VD
R
G
B

DXC-537A (J,UC)
DXC-537AP(EK)

A-3

A-3


IC3
AMP
RV4
R FLARE
2dB AMP
PRE KNEE
OUTPUT DRIVER
PRE BLKG
IC2,3 V SAW GEN
IC2,3 H SAW GEN
IC6
D/A CONV.
R VA OUT
R VA OUT
R GUM OUT
R PED CONT OUT
DTL CONT OUT
MANU KNEE OUT
4-4
3-4
6-2
4-5
3-1
5-9
1-2 PR
3-4 IE
1-5 PR
3-1 IE
2-9 PR
IC9
AMP
RV5
G FLARE
IC8,9 V SAW GEN
IC8,9 H SAW GEN
IC12
D/A CONV.
G OUT
M GUM OUT
MAS PED CONT OUT
3-6
6-1
4-7
3-6 IE
1-7 PR
IC15
AMP
RV6
B FLARE
IC14,15 V SAW GEN
IC14,15 H SAW GEN
IC18
D/A CONV.
B VA OUT
B GUM OUT
B PED CONT OUT
4-1
6-3
4-6
1-1 PR
1-6 PR
R
G
B
PR 1-9
EN 1-B10
4-9
1-A11
R RR VIDEO IN
R PR VIDEO OUT
Q1 BUFF
PR 1-11
EN 1-B8
4-11
1-A9
B RR VIDEO IN
B PR VIDEO OUT
Q2 BUFF
PR 1-10
EN 1-B9
4-10
1-A10
G RR VIDEO IN
G PR VIDEO OUT
Q3 BUFF
EN 1-B12
PR 2-11
1-A5
5-11
BLKG IN
BLKG OUT
IC34 BUFF
Q4 MUTE
IC19
IC20
IC20
IC20
Q5,6(1/2) DIFF AMP
Q6(2/2) BUFF
Q22 CLAMP
IC21,22 INTEGRATION
IC21
Q8,9 BUFF
Q23 SAMPLE HOLD
IC22 DC
D1 LIMITER
IC21
IC23 COMP
RB1
D/A CONV.
AT 1-4
1-B10
VA NAM OUT
Q16-18 NAM
Q24,D7 DET
IC26 SAMPLE HOLD
IC22 AMP
D8 LIMITER
Q11 Y BUFF
Q12(1/2) MUTE
Q12(2/2) AMP
D3 MUTE
Q13(1/2) BUFF
Q15,13(2/2) PEAK DET
Q26 MUTE
Q14,25 MIX
AT 1-11
1-B8
PARA IN
Q14(1/2) MUTE
IC28 GATE PULSE GEN
IC29,Q20
+5V
+4.6V REG
+4.6V
IC29,Q21
-3V
-2.5V REG
-2.5V
IC25,Q19
+9V
+8.5V REG
+8.5V
RV7
VOLTAGE ADJ
IC24
MICRO COMPUTER
D7 COMP
A7
A6
A5
A4
A3
A2
A1
A0
E5 Y DET/AUTO
E1 PEAK/AVE
F3 V RESET
C0 G/RB
C2 G/BLKG
C1 R/B
E3 ATW BUSY
C4 AT BUSY
F4 V S/H
E2 ABB
C4 AT BUSY
D1 VD
G3 LD1
G4 LD2
G6 LD3
G2 CLK
G1 D1
AT CLK C5
VA REQ F7
AT REQ
GAIN CONT UP LED
RES
CRISP G7
W.CLP E0
MAT 0 F0
MAT 1 F1
DCC ON/OFF F2
D0 B1
D1 B0
SCK B2
RDY B3
CS B4
DIAG
EXTAL
AT CLK IN
VA REQ OUT
AT REQ IN
Q7
GAIN UP IND OUT
RESET
GAIN UP CONT OUT
W CLP EN OUT
MAT0 OUT
MAT1 OUT
DCC ON/OFF OUT
1-A3
1-A4
1-A6
1-A16
1-B9
2-8
5-10
5-12
5-13
5-14
2-21 AT
2-22 AT
2-23 AT
VF,CN103-8
2-14 AT
2-8 IE
2-10 PR
2-12 PR
2-13 PR
2-14 PR
IC30
EEPROM
CS
5V
S2
DIAG
IC39,X1
OSC
BARS CONT IN
V SAMPLE IN
28MHz IN(IE)
BARS CONT OUT
V SAMPLE OUT
28MHz OUT(IE)
1-A7
1-A23
1-A25
4-13
2-5
2-1
2-10 AT
1-B14 EN
1-A25 MB
1-13 PR
2-5 IE
2-1 IE
HD
VD

VA-138 BLOCK
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

B-¥DXC537A-VA138BLOCK(M)

PR-180 BLOCK

1

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3

4

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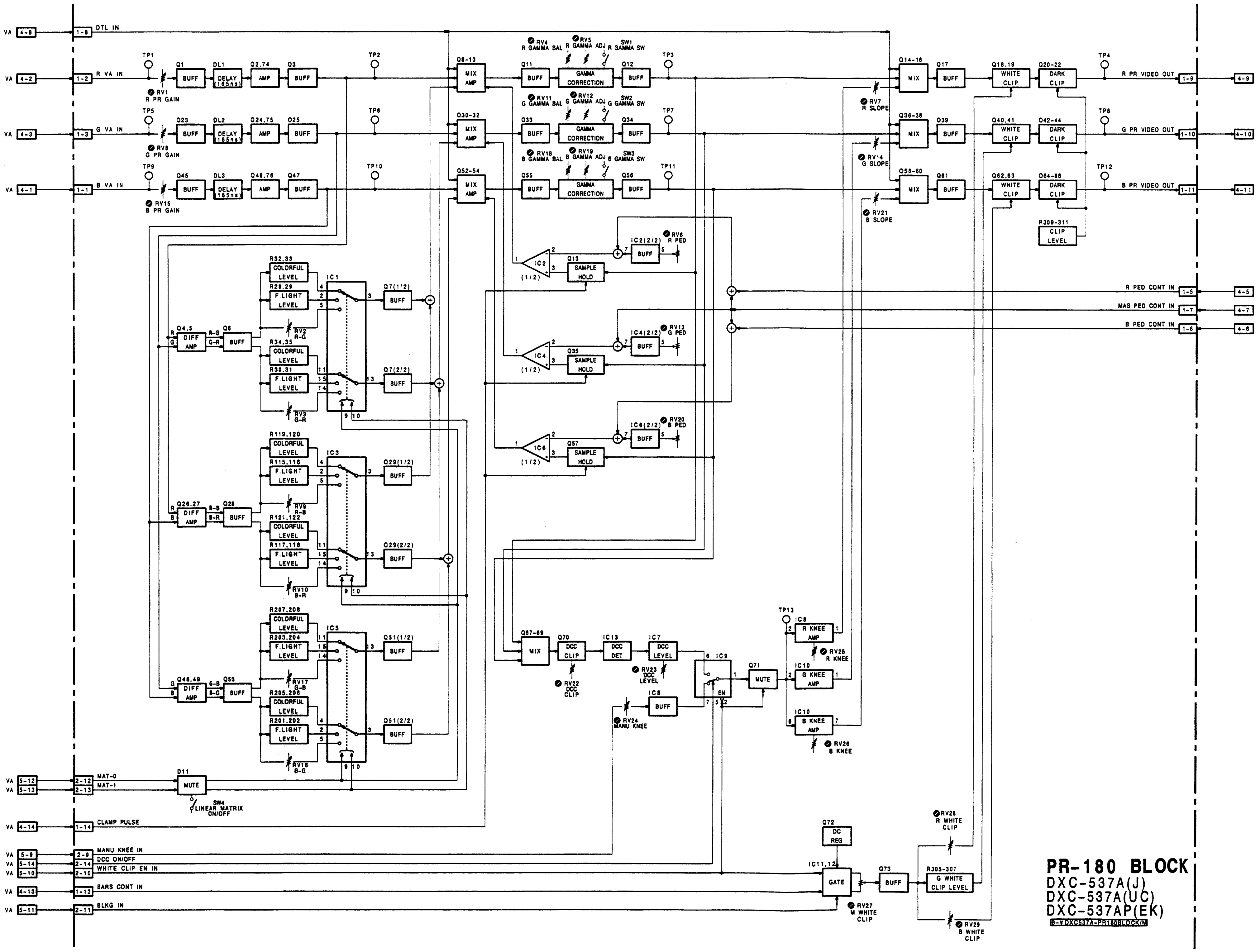
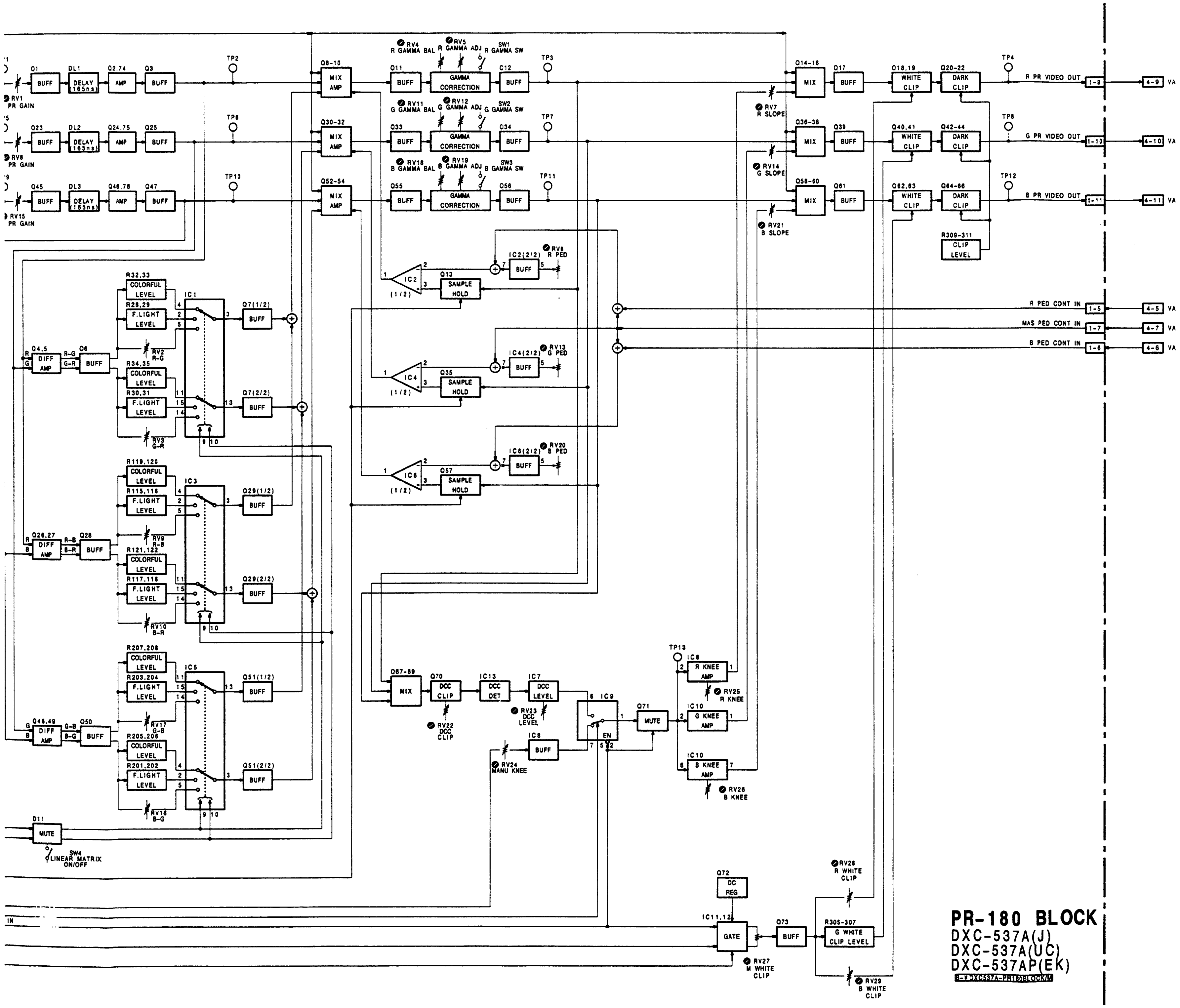

VA 4-8
1-8 DTL IN
VA 4-2
1-2 R VA IN
VA 4-3
1-3 G VA IN
VA 4-1
1-1 B VA IN
TP1
RV1 R PR GAIN
Q1 BUFF
DL1 DELAY (165ns)
Q2,74 AMP
Q3 BUFF
TP5
RV8 G PR GAIN
Q23 BUFF
DL2 DELAY (165ns)
Q24,75 AMP
Q25 BUFF
TP9
RV15 B PR GAIN
Q45 BUFF
DL3 DELAY (165ns)
Q46,76 AMP
Q47 BUFF
TP2
TP6
TP10
Q8-10 MIX AMP
Q30-32 MIX AMP
Q52-54 MIX AMP
RV4 R GAMMA BAL
RV5 R GAMMA ADJ
SW1 R GAMMA SW
RV11 G GAMMA BAL
RV12 G GAMMA ADJ
SW2 G GAMMA SW
RV18 B GAMMA BAL
RV19 B GAMMA ADJ
SW3 B GAMMA SW
Q11 BUFF
GAMMA CORRECTION
Q12 BUFF
Q33 BUFF
Q34 BUFF
Q55 BUFF
Q56 BUFF
TP3
TP7
TP11
RV7 R SLOPE
RV14 G SLOPE
RV21 B SLOPE
Q14-16 MIX
Q17 BUFF
Q36-38 MIX
Q39 BUFF
Q58-60 MIX
Q61 BUFF
Q18,19 WHITE CLIP
Q20-22 DARK CLIP
Q40,41 WHITE CLIP
Q42-44 DARK CLIP
Q62,63 WHITE CLIP
Q64-66 DARK CLIP
R309-311 CLIP LEVEL
TP4
TP8
TP12
R PR VIDEO OUT 1-9
4-9
G PR VIDEO OUT 1-10
4-10
B PR VIDEO OUT 1-11
4-11
IC2 (1/2)
Q13 SAMPLE HOLD
IC2(2/2) BUFF
RV6 R PED
IC4 (1/2)
Q35 SAMPLE HOLD
IC4(2/2) BUFF
RV13 G PED
IC6 (1/2)
Q57 SAMPLE HOLD
IC6(2/2) BUFF
RV20 B PED
R PED CONT IN 1-5
4-5
MAS PED CONT IN 1-7
4-7
B PED CONT IN 1-6
4-6
R32,33 COLORFUL LEVEL
R28,29 F.LIGHT LEVEL
IC1
Q7(1/2) BUFF
Q4,5 DIFF AMP
R-G G-R
Q6 BUFF
RV2 R-G
R34,35 COLORFUL LEVEL
R30,31 F.LIGHT LEVEL
Q7(2/2) BUFF
RV3 G-R
R119,120 COLORFUL LEVEL
R115,116 F.LIGHT LEVEL
IC3
Q29(1/2) BUFF
Q26,27 DIFF AMP
R-B B-R
Q28 BUFF
RV9 R-B
R121,122 COLORFUL LEVEL
R117,118 F.LIGHT LEVEL
Q29(2/2) BUFF
RV10 B-R
R207,208 COLORFUL LEVEL
R203,204 F.LIGHT LEVEL
IC5
Q51(1/2) BUFF
Q48,49 DIFF AMP
G-B B-G
Q50 BUFF
RV17 G-B
R205,206 COLORFUL LEVEL
R201,202 F.LIGHT LEVEL
Q51(2/2) BUFF
RV16 B-G
VA 5-12
VA 5-13
2-12 MAT-0
2-13 MAT-1
D11 MUTE
SW4 LINEAR MATRIX ON/OFF
VA 4-14
1-14 CLAMP PULSE
VA 5-9
2-9 MANU KNEE IN
VA 5-14
2-14 DCC ON/OFF
VA 5-10
2-10 WHITE CLIP EN IN
VA 4-13
1-13 BARS CONT IN
VA 5-11
2-11 BLKG IN
Q67-69 MIX
Q70 DCC CLIP
RV22 DCC CLIP
IC13 DCC DET
IC7 DCC LEVEL
RV23 DCC LEVEL
IC8 BUFF
RV24 MANU KNEE
IC9 EN
Q71 MUTE
TP13
IC8 R KNEE AMP
RV25 R KNEE
IC10 G KNEE AMP
IC10 B KNEE AMP
RV26 B KNEE
Q72 DC REG
IC11,12 GATE
RV27 M WHITE CLIP
Q73 BUFF
RV28 R WHITE CLIP
R305-307 G WHITE CLIP LEVEL
RV29 B WHITE CLIP

PR-180 BLOCK
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)
B-¥DXC537A-PR180BLOCK/M

A-4

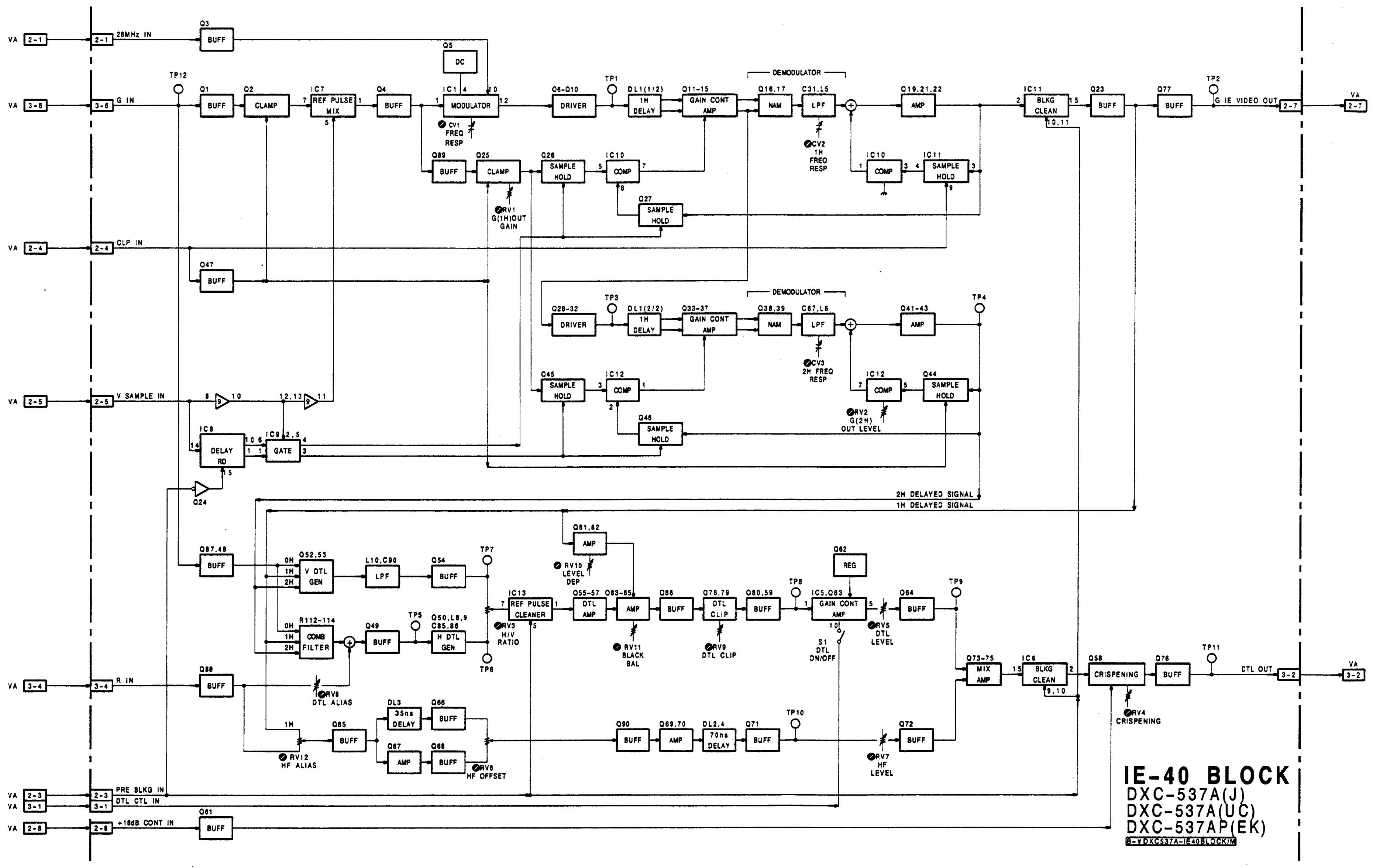
A-4

A B C D E F G H


Q1
BUFF
DL1
DELAY (165ns)
Q2,74
AMP
Q3
BUFF
RV1
PR GAIN
TP2
Q8-10
MIX AMP
RV4
R GAMMA BAL
RV5
R GAMMA ADJ
SW1
R GAMMA SW
Q11
GAMMA CORRECTION
C12
TP3
Q23
DL2
Q24,75
Q25
RV8
PR GAIN
TP6
Q30-32
RV11
G GAMMA BAL
RV12
G GAMMA ADJ
SW2
G GAMMA SW
Q33
Q34
TP7
Q45
DL3
Q46,76
Q47
RV15
PR GAIN
TP10
Q52-54
RV18
B GAMMA BAL
RV19
B GAMMA ADJ
SW3
B GAMMA SW
Q55
Q56
TP11
Q14-16
MIX
RV7
R SLOPE
Q36-38
RV14
G SLOPE
Q58-60
RV21
B SLOPE
Q17
Q39
Q61
Q18,19
WHITE CLIP
Q40,41
Q62,63
Q20-22
DARK CLIP
Q42-44
Q64-66
R309-311
CLIP LEVEL
TP4
TP8
TP12
R PR VIDEO OUT
G PR VIDEO OUT
B PR VIDEO OUT
1-9
1-10
1-11
4-9
4-10
4-11
VA
IC2
(1/2)
Q13
SAMPLE HOLD
IC2(2/2)
RV6
R PED
R PED CONT IN
MAS PED CONT IN
B PED CONT IN
1-5
1-7
1-6
4-5
4-7
4-6
IC4
Q35
IC4(2/2)
RV13
G PED
IC6
Q57
IC6(2/2)
RV20
B PED
R32,33
COLORFUL LEVEL
R28,29
F.LIGHT LEVEL
IC1
Q7(1/2)
Q7(2/2)
RV2
R-G
R34,35
R30,31
RV3
G-R
Q4,5
DIFF AMP
Q6
R-G
G-R
R119,120
R115,116
IC3
Q29(1/2)
Q29(2/2)
RV9
R-B
R121,122
R117,118
RV10
B-R
Q26,27
Q28
R-B
B-R
R207,208
R203,204
IC5
Q51(1/2)
Q51(2/2)
RV17
G-B
R205,206
R201,202
RV16
B-G
Q48,49
Q50
G-B
B-G
D11
MUTE
SW4
LINEAR MATRIX ON/OFF
Q67-69
Q70
DCC CLIP
RV22
DCC CLIP
IC13
DCC DET
IC7
DCC LEVEL
RV23
DCC LEVEL
IC9
EN
IC8
RV24
MANU KNEE
Q71
MUTE
TP13
IC8
R KNEE AMP
RV25
R KNEE
IC10
G KNEE AMP
IC10
B KNEE AMP
RV26
B KNEE
Q72
DC REG
IC11,12
GATE
RV27
M WHITE CLIP
Q73
RV28
R WHITE CLIP
R305-307
G WHITE CLIP LEVEL
RV29
B WHITE CLIP
IN

PR-180 BLOCK
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

IE-40 BLOCK


VA 2-1
28MHz IN
Q3 BUFF
Q5 DC
VA 3-6
G IN
TP12
Q1 BUFF
Q2 CLAMP
IC7 REF PULSE MIX
Q4 BUFF
IC1 MODULATOR
CV1 FREQ RESP
Q6-Q10 DRIVER
TP1
DL1(1/2) 1H DELAY
Q11-15 GAIN CONT AMP
DEMODULATOR
Q16,17 NAM
C31,L5 LPF
CV2 1H FREQ RESP
Q19,21,22 AMP
IC11 BLKG CLEAN
Q23 BUFF
Q77 BUFF
TP2
G IE VIDEO OUT
2-7
VA 2-7
Q89 BUFF
Q25 CLAMP
RV1 G(1H)OUT GAIN
Q26 SAMPLE HOLD
IC10 COMP
Q27 SAMPLE HOLD
IC10 COMP
IC11 SAMPLE HOLD
VA 2-4
CLP IN
Q47 BUFF
Q28-32 DRIVER
TP3
DL1(2/2) 1H DELAY
Q33-37 GAIN CONT AMP
DEMODULATOR
Q38,39 NAM
C67,L6 LPF
CV3 2H FREQ RESP
Q41-43 AMP
TP4
Q45 SAMPLE HOLD
IC12 COMP
Q46 SAMPLE HOLD
IC12 COMP
RV2 G(2H) OUT LEVEL
Q44 SAMPLE HOLD
VA 2-5
V SAMPLE IN
IC8 DELAY RD
IC9 GATE
Q24
2H DELAYED SIGNAL
1H DELAYED SIGNAL
Q87,48 BUFF
Q52,53 V DTL GEN
0H
1H
2H
L10,C90 LPF
Q54 BUFF
TP7
R112-114 COMB FILTER
Q49 BUFF
TP5
Q50,L8,9 C85,86 H DTL GEN
TP6
IC13 REF PULSE CLEANER
RV3 H/V RATIO
Q81,82 AMP
RV10 LEVEL DEP
Q55-57 DTL AMP
Q83-85 AMP
RV11 BLACK BAL
Q86 BUFF
Q78,79 DTL CLIP
RV9 DTL CLIP
Q80,59 BUFF
TP8
Q62 REG
IC5,Q63 GAIN CONT AMP
S1 DTL ON/OFF
RV5 DTL LEVEL
Q64 BUFF
TP9
VA 3-4
R IN
Q88 BUFF
RV8 DTL ALIAS
Q65 BUFF
RV12 HF ALIAS
DL3 35ns DELAY
Q66 BUFF
Q67 AMP
Q68 BUFF
RV6 HF OFFSET
Q90 BUFF
Q69,70 AMP
DL2,4 70ns DELAY
Q71 BUFF
TP10
RV7 HF LEVEL
Q72 BUFF
Q73-75 MIX AMP
IC6 BLKG CLEAN
Q58 CRISPENING
RV4 CRISPENING
Q76 BUFF
TP11
DTL OUT
3-2
VA 3-2
VA 2-3
PRE BLKG IN
VA 3-1
DTL CTL IN
VA 2-8
+18dB CONT IN
Q61 BUFF
IE-40 BLOCK
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)
B-¥DXC537A-IE40BLOCK/M

SG-171 BLOCK

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4

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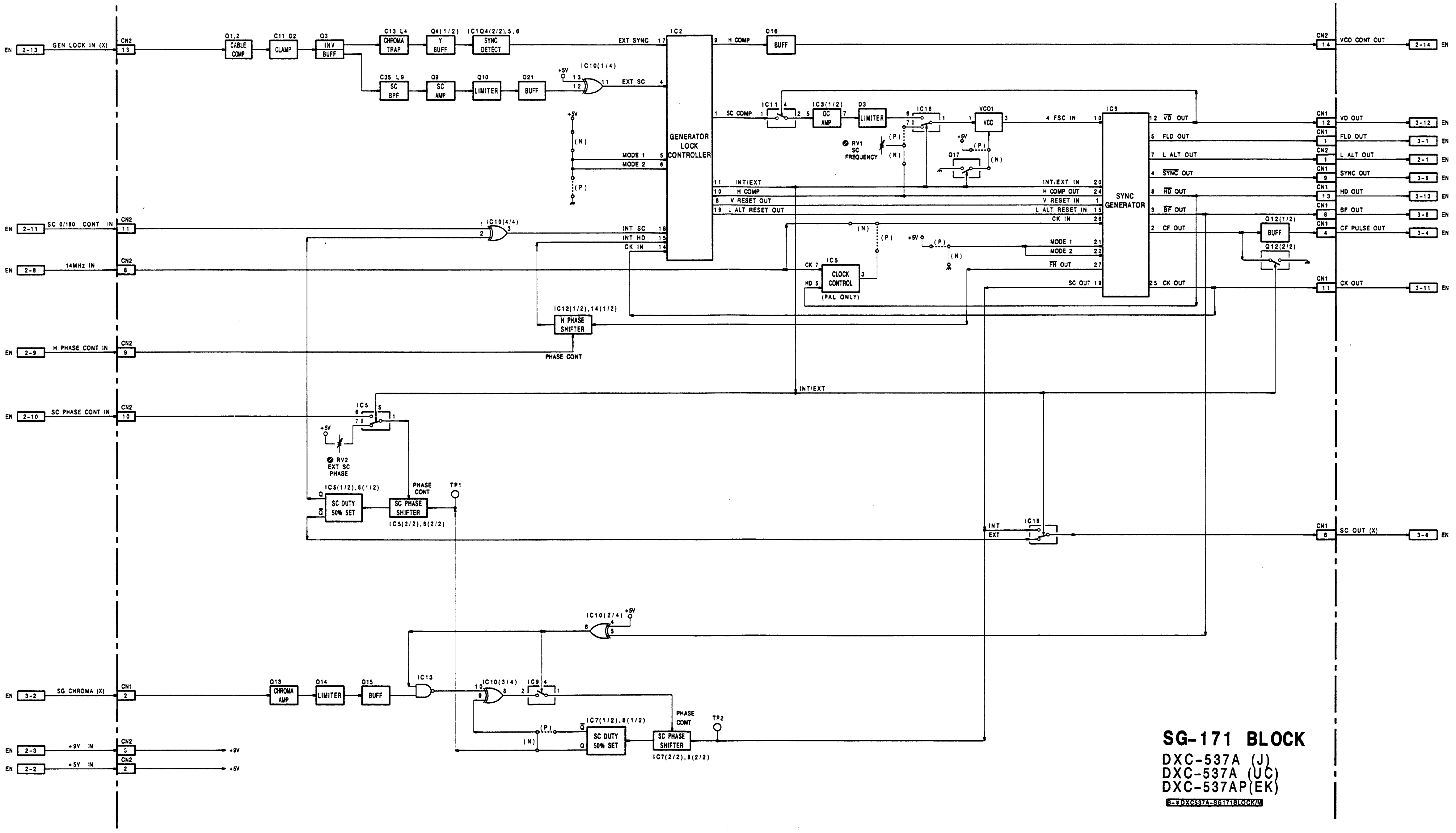

EN 2-13 GEN LOCK IN (X) CN2 13
Q1,2 CABLE COMP
C11 D2 CLAMP
Q3 INV BUFF
C13 L4 CHROMA TRAP
Q4(1/2) Y BUFF
IC1Q4(2/2),5,6 SYNC DETECT
C35 L9 SC BPF
Q9 SC AMP
Q10 LIMITER
Q21 BUFF
+5V
IC10(1/4)
13
12
11
EXT SYNC 17
EXT SC 4
IC2
GENERATOR LOCK CONTROLLER
MODE 1 5
MODE 2 6
(N)
(P)
INT SC 18
INT HD 15
CK IN 14
9 H COMP
Q16 BUFF
1 SC COMP
11 INT/EXT
10 H COMP
8 V RESET OUT
19 L ALT RESET OUT
IC11
IC3(1/2) DC AMP
D3 LIMITER
IC16
VCO1 VCO
RV1 SC FREQUENCY
Q17
4 FSC IN 10
INT/EXT IN 20
H COMP OUT 24
V RESET IN 1
L ALT RESET IN 15
CK IN 26
MODE 1 21
MODE 2 22
FH OUT 27
SC OUT 19
IC9
SYNC GENERATOR
12 VD OUT
5 FLD OUT
7 L ALT OUT
4 SYNC OUT
8 HD OUT
3 BF OUT
2 CF OUT
25 CK OUT
IC5 CLOCK CONTROL (PAL ONLY)
CK 7
HD 5
Q12(1/2) BUFF
Q12(2/2)
CN2 14 VCO CONT OUT 2-14 EN
CN1 12 VD OUT 3-12 EN
CN1 1 FLD OUT 3-1 EN
CN2 1 L ALT OUT 2-1 EN
CN1 9 SYNC OUT 3-9 EN
CN1 13 HD OUT 3-13 EN
CN1 8 BF OUT 3-8 EN
CN1 4 CF PULSE OUT 3-4 EN
CN1 11 CK OUT 3-11 EN
EN 2-11 SC 0/180 CONT IN CN2 11
IC10(4/4)
EN 2-8 14MHz IN CN2 8
IC12(1/2),14(1/2)
H PHASE SHIFTER
PHASE CONT
EN 2-9 H PHASE CONT IN CN2 9
INT/EXT
EN 2-10 SC PHASE CONT IN CN2 10
IC5
+5V
RV2 EXT SC PHASE
IC5(1/2),6(1/2)
SC DUTY 50% SET
Q
Q̄
PHASE CONT
SC PHASE SHIFTER
TP1
IC5(2/2),6(2/2)
INT
EXT
IC18
CN1 6 SC OUT (X) 3-6 EN
IC10(2/4) +5V
EN 3-2 SG CHROMA (X) CN1 2
Q13 CHROMA AMP
Q14 LIMITER
Q15 BUFF
IC13
IC10(3/4)
IC9
IC7(1/2),8(1/2)
SC DUTY 50% SET
PHASE CONT
SC PHASE SHIFTER
TP2
IC7(2/2),8(2/2)
EN 2-3 +9V IN CN2 3 +9V
EN 2-2 +5V IN CN2 2 +5V

SG-171 BLOCK

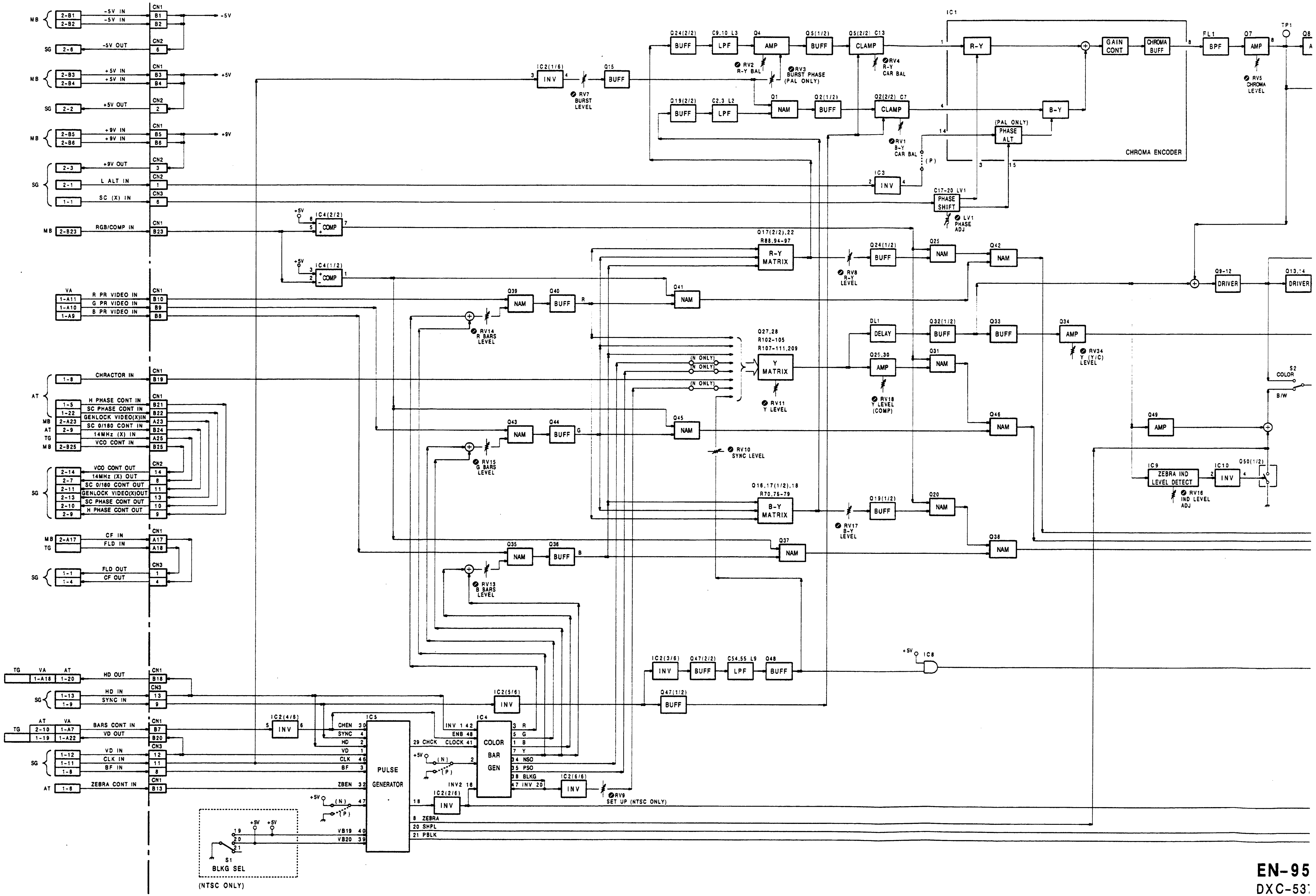
DXC-537A (J)
DXC-537A (UC)
DXC-537AP(EK)

B-¥DXC537A-SG171BLOCK/M

A-6 A-6

A B C D E F G H

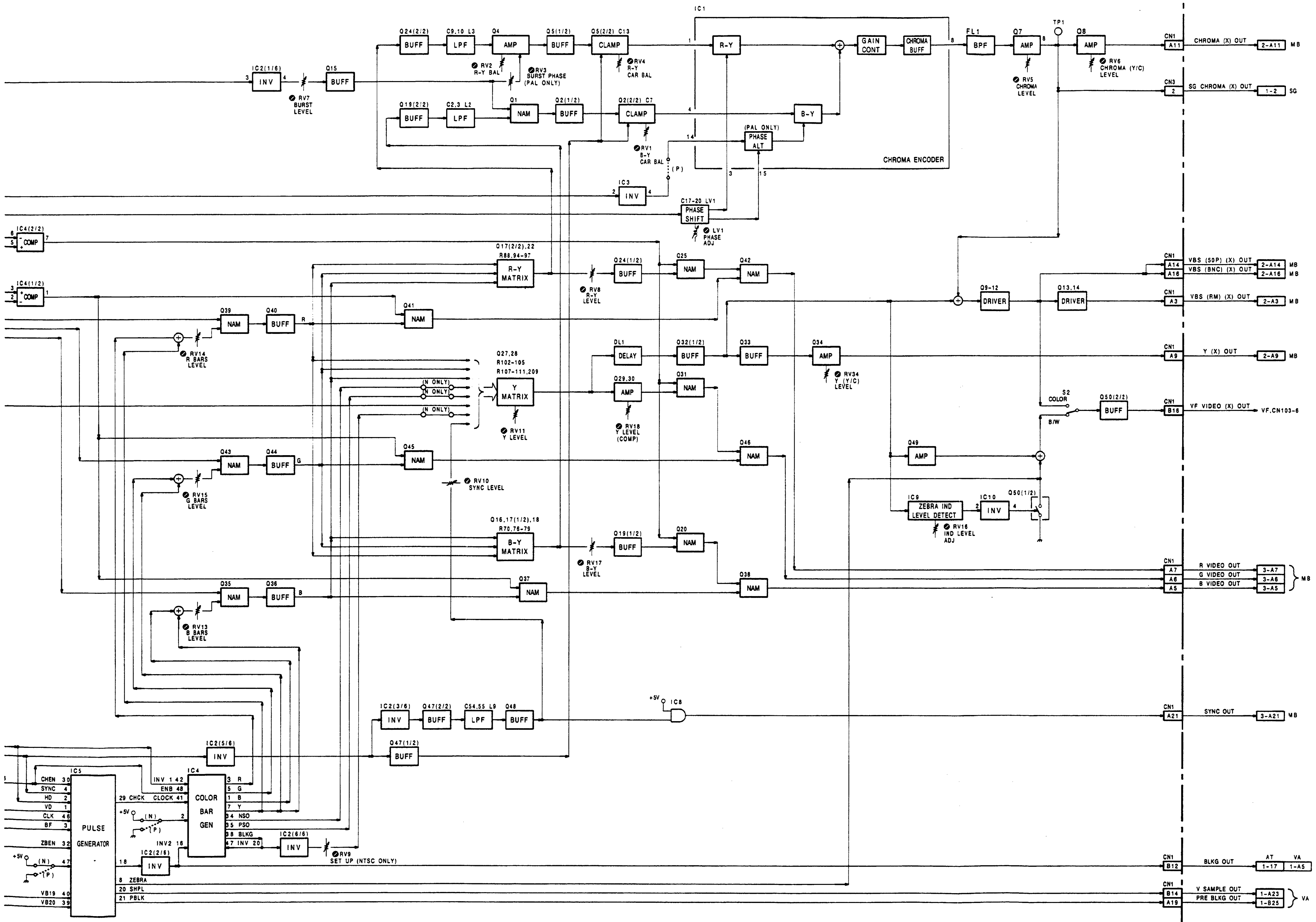
EN-95 BLOCK


MB 2-B1 2-B2 -5V IN -5V IN CN1 B1 B2 -5V
SG 2-6 -5V OUT CN2 6
MB 2-B3 2-B4 +5V IN +5V IN CN1 B3 B4 +5V
SG 2-2 +5V OUT CN2 2
MB 2-B5 2-B6 +9V IN +9V IN CN1 B5 B6 +9V
SG 2-3 +9V OUT CN2 3
2-1 L ALT IN CN2 1
1-1 SC (X) IN CN3 8
MB 2-B23 RGB/COMP IN CN1 B23
VA 1-A11 1-A10 1-A9 R PR VIDEO IN G PR VIDEO IN B PR VIDEO IN CN1 B10 B9 B8
AT 1-8 CHRACTOR IN CN1 B19
1-5 H PHASE CONT IN B21
1-22 SC PHASE CONT IN B22
MB 2-A23 GENLOCK VIDEO(X)IN A23
AT 2-9 SC 0/180 CONT IN B24
TG 14MHz (X) IN A25
MB 2-B25 VCO CONT IN B25
SG 2-14 VCO CONT OUT CN2 14
2-7 14MHz (X) OUT 8
2-11 SC 0/180 CONT OUT 11
2-13 GENLOCK VIDEO(X)OUT 13
2-10 SC PHASE CONT OUT 10
2-9 H PHASE CONT OUT 9
MB TG 2-A17 CF IN FLD IN CN1 A17 A18
SG 1-1 1-4 FLD OUT CF OUT CN3 1 4
TG VA AT 1-A18 1-20 HD OUT CN1 B18
SG 1-13 1-9 HD IN SYNC IN CN3 13 9
AT VA TG 2-10 1-A7 1-19 1-A22 BARS CONT IN VD OUT CN1 B7 B20
SG 1-12 1-11 1-8 VD IN CLK IN BF IN CN3 12 11 8
AT 1-8 ZEBRA CONT IN CN1 B13
IC4(2/2) COMP
IC4(1/2) COMP
IC2(1/6) INV
RV7 BURST LEVEL
Q15 BUFF
Q24(2/2) BUFF
C9,10 L3 LPF
Q4 AMP
RV2 R-Y BAL
RV3 BURST PHASE (PAL ONLY)
Q5(1/2) BUFF
Q5(2/2) C13 CLAMP
RV4 R-Y CAR BAL
Q19(2/2) BUFF
C2,3 L2 LPF
Q1 NAM
Q2(1/2) BUFF
Q2(2/2) C7 CLAMP
RV1 B-Y CAR BAL
(P)
IC1
R-Y
B-Y
(PAL ONLY) PHASE ALT
GAIN CONT
CHROMA BUFF
CHROMA ENCODER
FL1 BPF
Q7 AMP
RV5 CHROMA LEVEL
TP1
IC3 INV
C17-23 LV1 PHASE SHIFT
LV1 PHASE ADJ
Q17(2/2),22 R88,94-97 R-Y MATRIX
RV8 R-Y LEVEL
Q24(1/2) BUFF
Q25 NAM
Q42 NAM
Q9-12 DRIVER
Q13,14 DRIVER
Q39 NAM
Q40 BUFF
Q41 NAM
RV14 R BARS LEVEL
Q27,28 R102-105 R107-111,209 Y MATRIX
(N ONLY)
RV11 Y LEVEL
DL1 DELAY
Q32(1/2) BUFF
Q33 BUFF
Q34 AMP
RV34 Y (Y/C) LEVEL
Q29,30 AMP
RV18 Y LEVEL (COMP)
Q31 NAM
S2 COLOR B/W
Q43 NAM
Q44 BUFF
Q45 NAM
Q46 NAM
Q49 AMP
RV15 G BARS LEVEL
RV10 SYNC LEVEL
IC9 ZEBRA IND LEVEL DETECT
RV16 IND LEVEL ADJ
IC10 INV
Q50(1/2)
Q16,17(1/2),18 R70,75-79 B-Y MATRIX
RV17 B-Y LEVEL
Q19(1/2) BUFF
Q20 NAM
Q35 NAM
Q36 BUFF
Q37 NAM
Q38 NAM
RV13 B BARS LEVEL
IC2(3/6) INV
Q47(2/2) BUFF
C54,55 L9 LPF
Q48 BUFF
IC8
Q47(1/2) BUFF
IC2(5/6) INV
IC2(4/6) INV
IC5 PULSE GENERATOR
CHEN SYNC HD VD CLK BF ZBEN
INV 1 ENB CLOCK CHCK
IC4 COLOR BAR GEN
R G B Y NSO PSO BLKG INV 20
INV2
IC2(2/6) INV
IC2(6/6) INV
RV9 SET UP (NTSC ONLY)
ZEBRA SHPL PBLK
VB19 VB20
(N) (P)
S1 BLKG SEL
(NTSC ONLY)
EN-95
DXC-53
DXC-53

DXC-537A (J,UC)
DXC-537AP(EK)

A-7 A-7

A | B | C | D | E | F | G | H |


IC1
Q24(2/2) BUFF
C9,10 L3 LPF
Q4 AMP
Q5(1/2) BUFF
Q5(2/2) C13 CLAMP
R-Y
GAIN CONT
CHROMA BUFF
FL1 BPF
Q7 AMP
TP1
Q8 AMP
IC2(1/6) INV
Q15 BUFF
RV7 BURST LEVEL
RV2 R-Y BAL
RV3 BURST PHASE (PAL ONLY)
RV4 R-Y CAR BAL
RV5 CHROMA LEVEL
RV6 CHROMA (Y/C) LEVEL
Q19(2/2) BUFF
C2,3 L2 LPF
Q1 NAM
Q2(1/2) BUFF
Q2(2/2) C7 CLAMP
B-Y
(PAL ONLY) PHASE ALT
RV1 B-Y CAR BAL
(P)
CHROMA ENCODER
IC3 INV
C17-20 LV1 PHASE SHIFT
LV1 PHASE ADJ
IC4(2/2) COMP
IC4(1/2) COMP
Q17(2/2),22 R88,94-97 R-Y MATRIX
Q24(1/2) BUFF
Q25 NAM
Q42 NAM
RV8 R-Y LEVEL
Q39 NAM
Q40 BUFF
R
Q41 NAM
RV14 R BARS LEVEL
Q27,28 R102-105 R107-111,209 Y MATRIX
(N ONLY)
RV11 Y LEVEL
DL1 DELAY
Q32(1/2) BUFF
Q33 BUFF
Q34 AMP
RV34 Y (Y/C) LEVEL
Q29,30 AMP
RV18 Y LEVEL (COMP)
Q31 NAM
Q43 NAM
Q44 BUFF
G
Q45 NAM
RV15 G BARS LEVEL
RV10 SYNC LEVEL
Q46 NAM
Q49 AMP
Q9-12 DRIVER
Q13,14 DRIVER
S2 COLOR B/W
Q50(2/2) BUFF
IC9 ZEBRA IND LEVEL DETECT
IC10 INV
Q50(1/2)
RV16 IND LEVEL ADJ
Q16,17(1/2),18 R70,76-79 B-Y MATRIX
Q19(1/2) BUFF
Q20 NAM
RV17 B-Y LEVEL
Q35 NAM
Q36 BUFF
B
Q37 NAM
Q38 NAM
RV13 B BARS LEVEL
IC2(3/6) INV
Q47(2/2) BUFF
C54,55 L9 LPF
Q48 BUFF
+5V IC8
Q47(1/2) BUFF
IC2(5/6) INV
IC5 PULSE GENERATOR
CHEN 30
SYNC 4
HD 2
VD 1
CLK 46
BF 3
ZBEN 32
+5V (N) 47 (P)
VB19 40
VB20 39
29 CHCK
18
8 ZEBRA
20 SHPL
21 PBLK
IC4 COLOR BAR GEN
INV 1 42
ENB 48
CLOCK 41
INV2 16
3 R
5 G
1 B
7 Y
34 NSO
35 PSO
38 BLKG
47 INV 20
+5V (N) 2 (P)
IC2(2/6) INV
IC2(6/6) INV
RV9 SET UP (NTSC ONLY)
CN1 A11 CHROMA (X) OUT 2-A11 MB
CN3 2 SG CHROMA (X) OUT 1-2 SG
CN1 A14 VBS (50P) (X) OUT 2-A14 MB
A16 VBS (BNC) (X) OUT 2-A16 MB
CN1 A3 VBS (RM) (X) OUT 2-A3 MB
CN1 A9 Y (X) OUT 2-A9 MB
CN1 B16 VF VIDEO (X) OUT VF.CN103-6
CN1 A7 R VIDEO OUT 3-A7
A6 G VIDEO OUT 3-A6
A5 B VIDEO OUT 3-A5
MB
CN1 A21 SYNC OUT 3-A21 MB
CN1 B12 BLKG OUT AT 1-17 VA 1-A5
CN1 B14 Y SAMPLE OUT 1-A23
A19 PRE BLKG OUT 1-B25
VA

EN-95A BLOCK

DXC-537A (J,UC)
DXC-537AP(EK)
B-Y DXC537A-EN95ABLOCK/M

AT-78 BLOCK

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3

4

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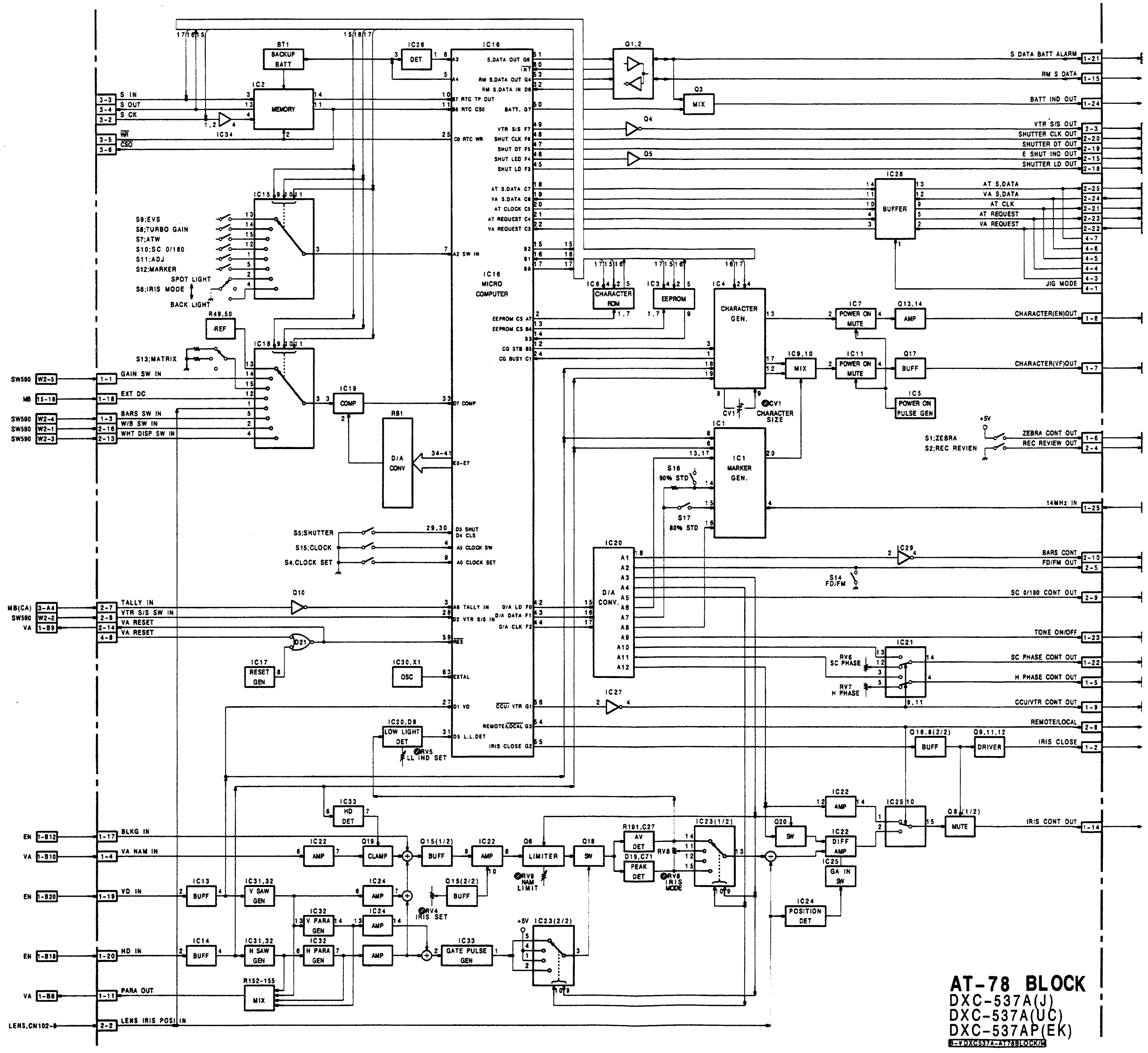


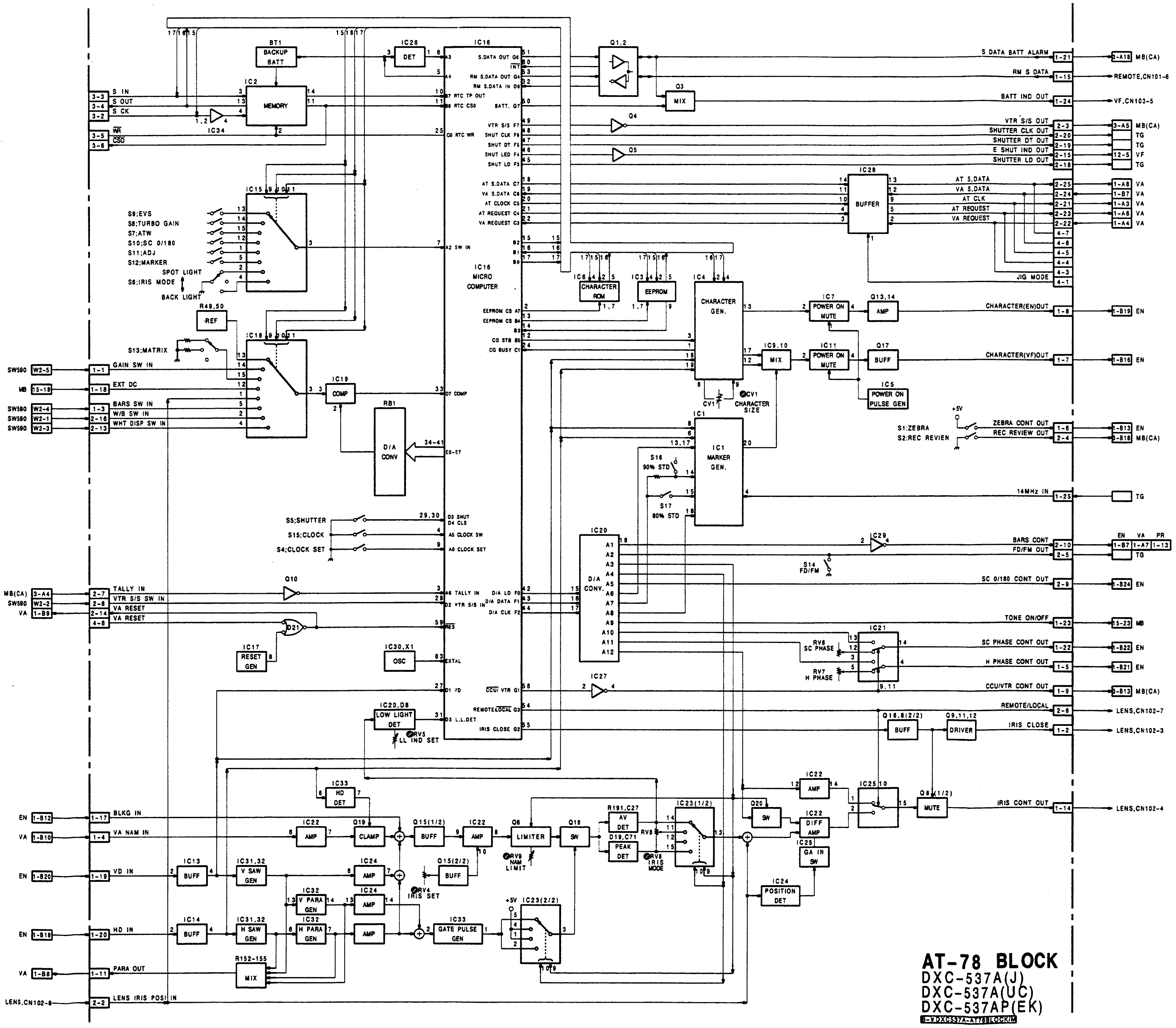
S IN
S OUT
S CK
WR
CS0
BT1
BACKUP BATT
IC2
MEMORY
IC34
IC26
DET
IC16
MICRO COMPUTER
S.DATA OUT
RM S.DATA OUT
RM S.DATA IN
RTC TP OUT
RTC CS0
BATT
CO RTC WR
VTR S/S
SHUT CLK
SHUT DT
SHUT LED
SHUT LD
AT S.DATA
VA S.DATA
AT CLOCK
AT REQUEST
VA REQUEST
A2 SW IN
Q1,2
Q3
MIX
Q4
Q5
IC28
BUFFER
S DATA BATT ALARM
RM S DATA
BATT IND OUT
VTR S/S OUT
SHUTTER CLK OUT
SHUTTER DT OUT
E SHUT IND OUT
SHUTTER LD OUT
AT S.DATA
VA S.DATA
AT CLK
AT REQUEST
VA REQUEST
JIG MODE
IC15
S9;EVS
S8;TURBO GAIN
S7;ATW
S10;SC 0/180
S11;ADJ
S12;MARKER
SPOT LIGHT
S6;IRIS MODE
BACK LIGHT
R49,50
REF
IC18
S13;MATRIX
SW590
MB
GAIN SW IN
EXT DC
BARS SW IN
W/B SW IN
WHT DISP SW IN
IC19
COMP
RB1
D/A CONV
EEPROM CS
CG STB
CG BUSY
D7 COMP
E0-E7
IC6
CHARACTER ROM
IC3
EEPROM
IC4
CHARACTER GEN.
CV1
CHARACTER SIZE
IC7
POWER ON MUTE
Q13,14
AMP
CHARACTER(EN)OUT
IC9,10
MIX
IC11
POWER ON MUTE
Q17
BUFF
CHARACTER(VF)OUT
IC5
POWER ON PULSE GEN
+5V
S1;ZEBRA
S2;REC REVIEW
ZEBRA CONT OUT
REC REVIEW OUT
IC1
MARKER GEN.
S16
90% STD
S17
80% STD
14MHz IN
S5;SHUTTER
S15;CLOCK
S4;CLOCK SET
D3 SHUT
D4 CLS
A5 CLOCK SW
A0 CLOCK SET
IC20
D/A CONV.
IC29
BARS CONT
FD/FM OUT
S14
FD/FM
SC 0/180 CONT OUT
TONE ON/OFF
IC21
RV6
SC PHASE
RV7
H PHASE
SC PHASE CONT OUT
H PHASE CONT OUT
MB(CA)
VA
TALLY IN
VTR S/S SW IN
VA RESET
Q10
A6 TALLY IN
D2 VTR S/S IN
D/A LD
D/A DATA
D/A CLK
Q21
RES
IC17
RESET GEN
IC30,X1
OSC
EXTAL
D1 VD
CCU/VTR
IC27
CCU/VTR CONT OUT
REMOTE/LOCAL
IRIS CLOSE
IC20,D8
LOW LIGHT DET
RV5
LL IND SET
D5 L.L.DET
Q16,8(2/2)
BUFF
Q9,11,12
DRIVER
IRIS CLOSE
IC33
HD DET
EN
BLKG IN
VA NAM IN
VD IN
HD IN
PARA OUT
LENS,CN102-8
LENS IRIS POSI IN
IC22
AMP
Q19
CLAMP
Q15(1/2)
BUFF
IC22
AMP
Q6
LIMITER
Q18
SW
R191,C27
AV DET
D19,C71
PEAK DET
RV8
NAM LIMIT
RV9
IRIS MODE
IC23(1/2)
Q20
SW
IC22
AMP
IC22
DIFF AMP
IC25
GA IN SW
IC25
Q8(1/2)
MUTE
IRIS CONT OUT
IC24
POSITION DET
IC13
BUFF
IC31,32
V SAW GEN
IC24
AMP
Q15(2/2)
BUFF
RV4
IRIS SET
IC32
V PARA GEN
IC32
H PARA GEN
IC24
AMP
IC14
BUFF
IC31,32
H SAW GEN
AMP
IC33
GATE PULSE GEN
IC23(2/2)
R152-155
MIX

AT-78 BLOCK
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

A-8

A-8

A B C D E F G H


BT1
BACKUP BATT
IC26
DET
IC16
Q1,2
IC2
MEMORY
IC34
Q3
MIX
Q4
Q5
S IN
S OUT
S CK
WR
CS0
S.DATA OUT
RM S.DATA OUT
RM S.DATA IN
RTC TP OUT
RTC CS0
BATT.
RTC WR
VTR S/S
SHUT CLK
SHUT DT
SHUT LED
SHUT LD
AT S.DATA
VA S.DATA
AT CLOCK
AT REQUEST
VA REQUEST
IC15
S9;EVS
S8;TURBO GAIN
S7;ATW
S10;SC 0/180
S11;ADJ
S12;MARKER
SPOT LIGHT
S8;IRIS MODE
BACK LIGHT
SW IN
IC16
MICRO COMPUTER
IC28
BUFFER
S DATA BATT ALARM
RM S DATA
BATT IND OUT
VTR S/S OUT
SHUTTER CLK OUT
SHUTTER DT OUT
E SHUT IND OUT
SHUTTER LD OUT
AT S.DATA
VA S.DATA
AT CLK
AT REQUEST
VA REQUEST
JIG MODE
MB(CA)
REMOTE,CN101-6
VF,CN103-5
TG
VF
VA
R49,50
REF
IC6
CHARACTER ROM
IC3
EEPROM
IC4
CHARACTER GEN.
IC7
POWER ON MUTE
Q13,14
AMP
CHARACTER(EN)OUT
EN
IC9,10
MIX
IC11
POWER ON MUTE
Q17
BUFF
CHARACTER(VF)OUT
IC5
POWER ON PULSE GEN
CV1
CHARACTER SIZE
EEPROM CS
CG STB
CG BUSY
S13;MATRIX
IC18
IC19
COMP
RB1
D/A CONV
GAIN SW IN
EXT DC
BARS SW IN
W/B SW IN
WHT DISP SW IN
SW590
MB
IC1
MARKER GEN.
S16
90% STD
S17
80% STD
+5V
S1;ZEBRA
S2;REC REVIEW
ZEBRA CONT OUT
REC REVIEW OUT
14MHz IN
S5;SHUTTER
S15;CLOCK
S4;CLOCK SET
SHUT
CLS
CLOCK SW
CLOCK SET
IC20
D/A CONV.
IC29
S14
FD/FM
BARS CONT
FD/FM OUT
EN VA PR
SC 0/180 CONT OUT
TONE ON/OFF
Q10
TALLY IN
VTR S/S SW IN
VA RESET
D21
IC17
RESET GEN
IC30,X1
OSC
XTAL
IC21
RV6
SC PHASE
RV7
H PHASE
SC PHASE CONT OUT
H PHASE CONT OUT
IC27
CCU/VTR CONT OUT
REMOTE/LOCAL
IRIS CLOSE
LENS,CN102-7
LENS,CN102-3
IC20,D8
LOW LIGHT DET
RV5
LL IND SET
L.L.DET
VD
Q18,8(2/2)
BUFF
Q9,11,12
DRIVER
IC33
HD DET
IC22
AMP
Q19
CLAMP
Q15(1/2)
BUFF
Q6
LIMITER
RV9
NAM LIMIT
Q18
SW
R191,C27
AV DET
D19,C71
PEAK DET
RV8
IRIS MODE
IC23(1/2)
Q20
SW
IC22
DIFF AMP
IC25
GA IN SW
IC25
Q8(1/2)
MUTE
IRIS CONT OUT
LENS,CN102-4
BLKG IN
VA NAM IN
VD IN
HD IN
PARA OUT
LENS IRIS POSI IN
LENS,CN102-8
IC13
BUFF
IC31,32
V SAW GEN
IC24
AMP
Q15(2/2)
BUFF
RV4
IRIS SET
IC32
V PARA GEN
IC14
BUFF
H SAW GEN
H PARA GEN
IC33
GATE PULSE GEN
IC23(2/2)
IC24
POSITION DET
R152-155
MIX

AT-78 BLOCK

DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

B-Y DXC537A-AT78BLOCK/A

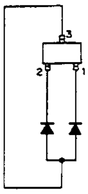
SECTION B
SEMICONDUCTOR

The circuit diagram of IC is obtained from the IC data book published by the manufacture.

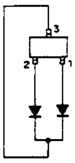
	TYPE	PAGE
DIODE	1S2835	B-2
	1S2837	B-2
	1SS123	B-2
	1SS303	B-2
	HSM107S	B-2
	HSM88AS	B-2
	HSM88WA	B-2
	HZS??CLL	B-2
	MA141WK	B-2
	MA143	B-2
	RD??MB	B-2
	U05G	B-2
TRANSISTOR	2SA1213	B-2
	2SA1226	B-2
	2SA1462	B-2
	2SA1576	B-2
	2SA1610	B-2
	2SA1611	B-2
	2SA812	B-2
	2SB798	B-2
	2SB799	B-2
	2SB815	B-2
	2SC1009A	B-2
	2SC1623	B-2
	2SC2757	B-2
	2SC2873Y	B-2
	2SC4081	B-2
	2SC4176	B-2
	2SC4177	B-2
	2SD1048	B-2
	2SD999	B-2
	2SK853	B-2
	2SK94	B-2
	3SK163	B-2
	NTM2369	B-2
	XN4601	B-2
	XN6401	B-2
	XN6435	B-2
	XN6501	B-2
	XN6534	B-2
IC	74AC04SJ	B-3
	AT27C256R-15RC	B-3
	CX22017	B-3
	CX7968A	B-4
	CX7969	B-10
	CXA1065N	B-11
	CXD1035BQ-Z	B-5
	CXD1216M	B-12
	CXD1217M	B-12
	CXD1361M	B-13
	CXD8095Q	B-14
	CXD8154BM	B-16
	HD6305Y0E91F	B-15
	HD6305Y0E92F	B-15
	LM35DZ	B-16
IC	M5237ML	B-16
	M62352GP	B-16
	M6M80021FP	B-17
	M6M80041FP	B-17
	MB7114LPF	B-17
	MB7116H	B-17
	MC14017BF	B-18
	MC14020BF	B-18
	MC14051BF	B-18
	MC14052BF	B-18
	MC14053BF	B-18
	MC14081BF	B-19
	MC1496MR	B-19
	MC74HC4053F	B-19
	NJM2043M-D	B-19
	NJM2903M	B-19
	NJM319M	B-19
	RTC4553B	B-19
	SN74HC00ANS	B-20
	SN74HC04ANS	B-20
	SN74HC365ANS	B-20
	SN74HC574ANS	B-20
	SN74HC74ANS	B-20
	SN74HC86ANS	B-20
	SN74LS123NS	B-20
	TC4053BFS	B-18
	TC4S66F	B-21
	TC4S69F	B-21
	TC4S71F	B-21
	TC4S81F	B-21
	TC4SU11F	B-21
	TC4SU69F	B-21
	TC4W53F	B-21
	TC74HC123AF	B-21
	TC74HC4052AFS	B-21
	TC74HC4053AF	B-22
	TC74HC4053AFS	B-22
	TC74HC4538AF	B-22
	TC7S00F	B-22
	TC7S02F	B-22
	TC7S04F	B-22
	TC7S08F	B-22
	TC7S32F	B-22
	TL062CPS	B-22
	TL064CNS	B-22
	TL064CPW	B-23
	TL7700CPS	B-23
	UPC311G2	B-23
	UPC358G2	B-23
	UPC812G2	B-23
	UPD6451AGT	B-23

DIODE, TRANSISTOR

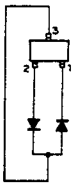
DIODE



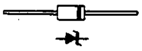
1S2835
1SS303
HSM88WA



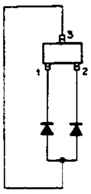
1S2837



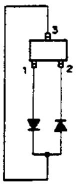
1SS123
HSM107S
HSM88AS



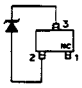
HZS ? ?CLL



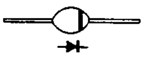
MA141WK



MA143

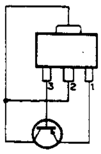


RD ? ?MB

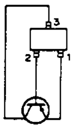


U05G

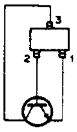
TRANSISTOR



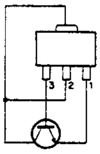
2SA1213
2SB798
2SB799



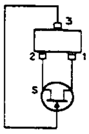
2SA1226
2SA1462
2SA1576
2SA1610
2SA1611
2SA812
2SB815



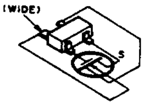
2SC1009A
2SC1623
2SC2757
2SC4081
2SC4176
2SC4177
2SD1048
NTM2369



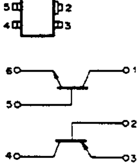
2SC2873Y
2SD999



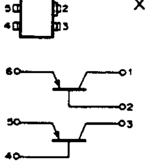
2SK853
2SK94



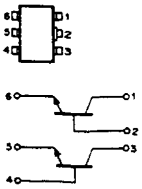
3SK163



XN4601



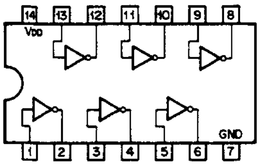
XN6401
XN6435

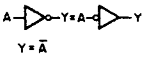


XN6501
XN6534

74AC04SJ (NS) FLAT PACKAGE
SN74HC04ANS (TI) FLAT PACKAGE

C-MOS HEX INVERTERS
– TOP VIEW –


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



Y = $\bar{A}$

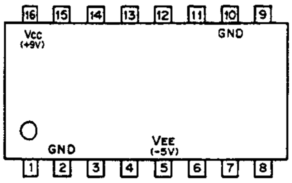
A	Y
0	1
1	0

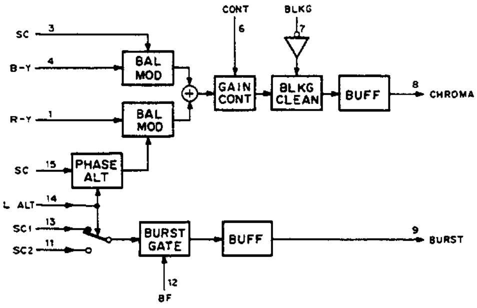
0 : LOW LEVEL
1 : HIGH LEVEL

NOTE :

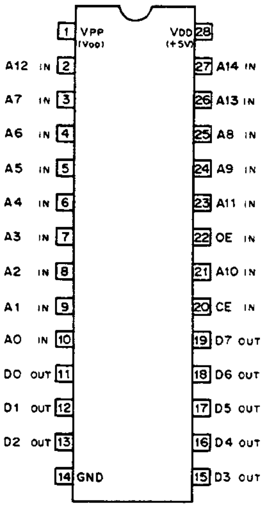
TYPE	VDD
74HCT04 TYPE	+5V
74VHC TC74AC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

CX22017 (SONY)
VIDEO SIGNAL PROCESSOR
– TOP VIEW –

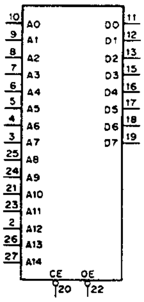

16
15
14
13
12
11
10
9
VCC (+9V)
GND
GND
VEE (-5V)
1
2
3
4
5
6
7
8

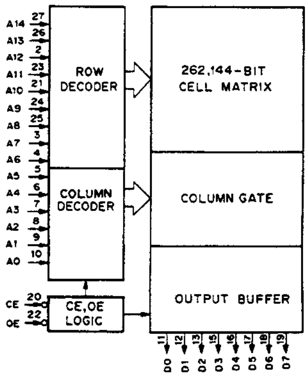

SC 3
B-Y 4
R-Y 1
BAL MOD
BAL MOD
CONT 6
BLKG 7
GAIN CONT
BLKG CLEAN
BUFF
8 CHROMA
SC 15
PHASE ALT
L ALT 14
SC1 13
SC2 11
BURST GATE
BUFF
9 BURST
12 BF

AT27C256R-15RC (ATMEL)
C-MOS 256K (32Kx8)-BIT UV ERASABLE PROM WITH 3-STATE OUTPUTS
– TOP VIEW –


1 VPP (VDD)
2 A12 IN
3 A7 IN
4 A6 IN
5 A5 IN
6 A4 IN
7 A3 IN
8 A2 IN
9 A1 IN
10 A0 IN
11 D0 OUT
12 D1 OUT
13 D2 OUT
14 GND
28 VDD (+5V)
27 A14 IN
26 A13 IN
25 A8 IN
24 A9 IN
23 A11 IN
22 OE IN
21 A10 IN
20 CE IN
19 D7 OUT
18 D6 OUT
17 D5 OUT
16 D4 OUT
15 D3 OUT

A0 – A14 : ADDRESS INPUTS
CE : CHIP ENABLE INPUT
D0 – D7 : DATA OUTPUTS
OE : OUTPUT ENABLE INPUT
VPP : PROGRAM POWER SUPPLY


10 A0
9 A1
8 A2
7 A3
6 A4
5 A5
4 A6
3 A7
25 A8
24 A9
21 A10
23 A11
2 A12
26 A13
27 A14
D0 11
D1 12
D2 13
D3 15
D4 16
D5 17
D6 18
D7 19
CE 20
OE 22


A14 27
A13 26
A12 2
A11 23
A10 21
A9 24
A8 25
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
ROW DECODER
262,144-BIT CELL MATRIX
COLUMN DECODER
COLUMN GATE
OUTPUT BUFFER
CE 20
OE 22
CE,OE LOGIC
11 D0
12 D1
13 D2
15 D3
16 D4
17 D5
18 D6
19 D7

An	CE	OE	VDD	VPP	Dn	FUNCTION
An	0	0	+5V	+5V	DOUT	READ
An	0	1	+5V	+5V	HI–Z	OUTPUT DISABLE
X	1	X	+5V	+5V	HI–Z	STANDBY
An	0	1	+6V	+12.5V	DIN	PGM
An	1	0	+6V	+12.5V	DOUT	PGM VERIFY (1)
An	0	0	+6V	+12.5V	DOUT	PGM VERIFY (2)
X	1	1	+6V	+12.5V	HI–Z	PGM INH
A0	0	0	+5V	+5V	DEVICE CODE	ELECTRONIC SIGNATURE*

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE
HI-Z: HIGH IMPEDANCE

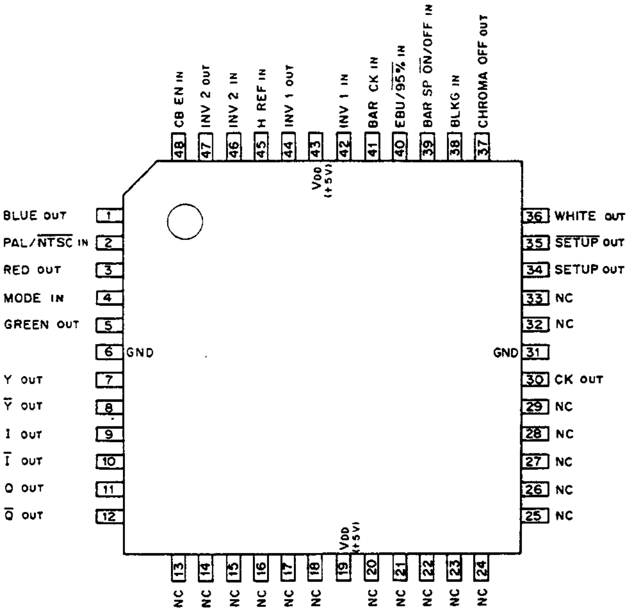
*SEE FOLLOWING DESCRIPTION.

ELECTRONIC SIGNATURE FOR P ROM WRITER
ADDRESS SETTINGS IN READ MODE

A1 – A8	A9	A10 – A13	A14,Vpp
0	12V	0	1

		CODE DATA								
	A0	D7	D6	D5	D4	D3	D2	D1	D0	
MAKER CODE	0	0	0	0	0	0	1	0	0	04H
DEVICE CODE	1	0	1	1	0	0	0	1	0	62H

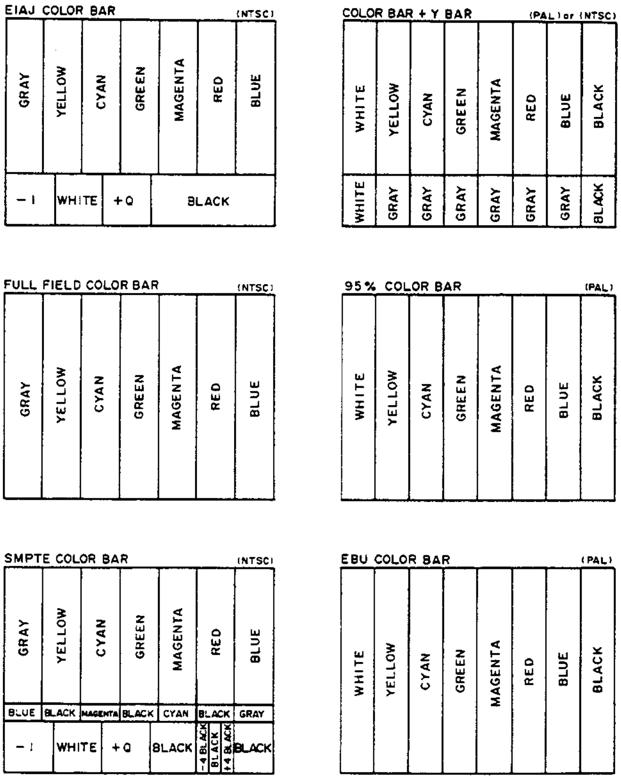
CX7968A (SONY)
C-MOS COLOR BAR GENERATOR
– TOP VIEW –

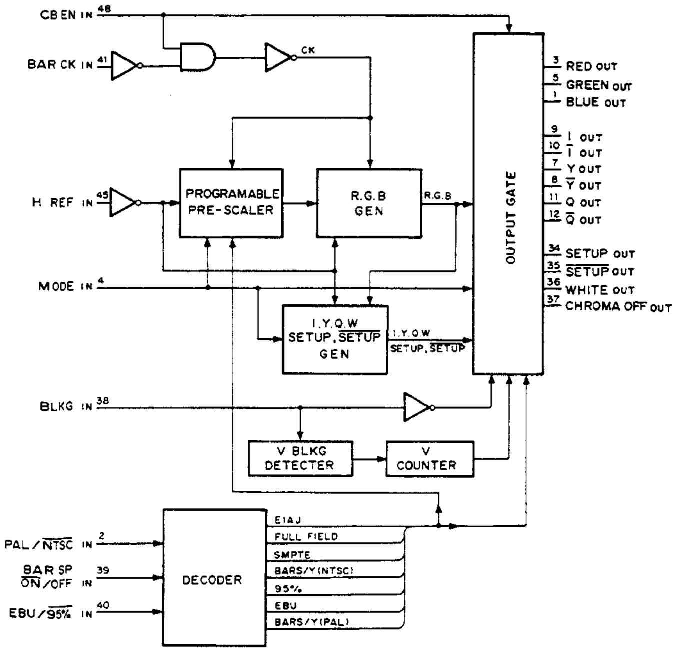

48 CB EN IN
47 INV 2 OUT
46 INV 2 IN
45 H REF IN
44 INV 1 OUT
43 VDD (+5V)
42 INV 1 IN
41 BAR CK IN
40 EBU/95% IN
39 BAR SP ON/OFF IN
38 BLKG IN
37 CHROMA OFF OUT
1 BLUE OUT
2 PAL/NTSC IN
3 RED OUT
4 MODE IN
5 GREEN OUT
6 GND
7 Y OUT
8 Y OUT
9 I OUT
10 I OUT
11 Q OUT
12 Q OUT
36 WHITE OUT
35 SETUP OUT
34 SETUP OUT
33 NC
32 NC
31 GND
30 CK OUT
29 NC
28 NC
27 NC
26 NC
25 NC
13 NC
14 NC
15 NC
16 NC
17 NC
18 NC
19 VDD (+5V)
20 NC
21 NC
22 NC
23 NC
24 NC

INPUT				FUNCTION
PAL/NTSC	MODE	EBU/95%	BAR SP	
0	0	0	0	EIAJ COLOR BAR
0	0	0	1	FULL FIELD COLOR BAR
0	0	1	0	INHIBIT
0	0	1	1	INHIBIT
0	1	0	0	EIAJ COLOR BAR
0	1	0	1	FULL FIELD COLOR BAR
0	1	1	0	SMPTE COLOR BAR
0	1	1	1	COLOR BAR + Y BAR
1	0	0	0	95% COLOR BAR
1	0	0	1	INHIBIT
1	0	1	0	EBU COLOR BAR
1	0	1	1	INHIBIT
1	1	0	0	95% COLOR BAR
1	1	0	1	COLOR BAR + Y BAR
1	1	1	0	EBU COLOR BAR
1	1	1	1	INHIBIT

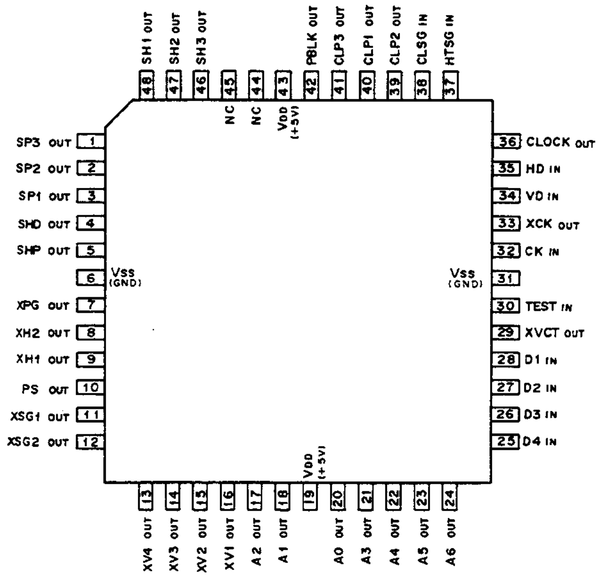
0 ; LOW LEVEL
1 ; HIGH LEVEL

O COLOR BAR PATTERN

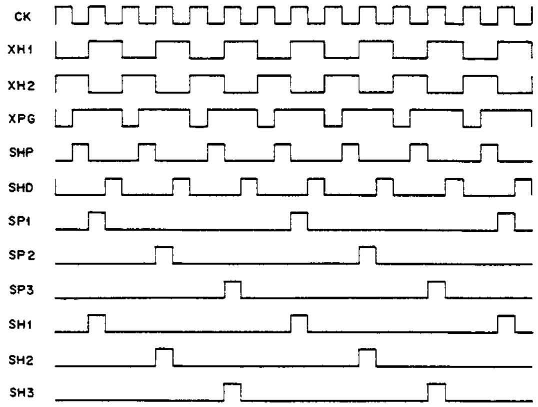

EIAJ COLOR BAR (NTSC)
GRAY
YELLOW
CYAN
GREEN
MAGENTA
RED
BLUE
– I
WHITE
+Q
BLACK
COLOR BAR + Y BAR (PAL) or (NTSC)
WHITE
YELLOW
CYAN
GREEN
MAGENTA
RED
BLUE
BLACK
WHITE
GRAY
GRAY
GRAY
GRAY
GRAY
GRAY
BLACK
FULL FIELD COLOR BAR (NTSC)
GRAY
YELLOW
CYAN
GREEN
MAGENTA
RED
BLUE
95% COLOR BAR (PAL)
WHITE
YELLOW
CYAN
GREEN
MAGENTA
RED
BLUE
BLACK
SMPTE COLOR BAR (NTSC)
GRAY
YELLOW
CYAN
GREEN
MAGENTA
RED
BLUE
BLUE
BLACK
MAGENTA
BLACK
CYAN
BLACK
GRAY
– I
WHITE
+Q
BLACK
-4 BLACK
BLACK
+4 BLACK
BLACK
EBU COLOR BAR (PAL)
WHITE
YELLOW
CYAN
GREEN
MAGENTA
RED
BLUE
BLACK


CB EN IN 48
BAR CK IN 41
CK
H REF IN 45
PROGRAMABLE PRE-SCALER
R.G.B GEN
R.G.B
MODE IN 4
I.Y.Q.W SETUP, SETUP GEN
I.Y.Q.W
SETUP, SETUP
OUTPUT GATE
3 RED OUT
5 GREEN OUT
1 BLUE OUT
9 I OUT
10 I OUT
7 Y OUT
8 Y OUT
11 Q OUT
12 Q OUT
34 SETUP OUT
35 SETUP OUT
36 WHITE OUT
37 CHROMA OFF OUT
BLKG IN 38
V BLKG DETECTER
V COUNTER
PAL/NTSC IN 2
BAR SP ON/OFF IN 39
EBU/95% IN 40
DECODER
EIAJ
FULL FIELD
SMPTE
BARS/Y (NTSC)
95%
EBU
BARS/Y (PAL)

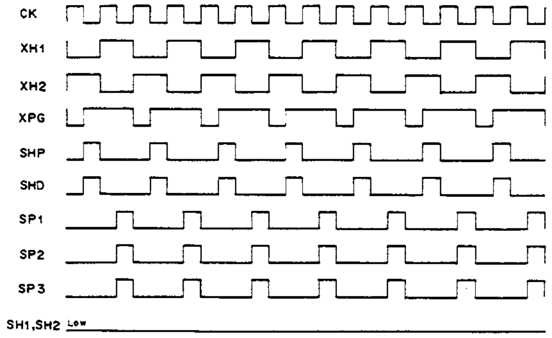
CXD1035BQ-Z (SONY) FLAT PACKAGE
C-MOS TIMING PULSE GENERATOR FOR CCD CAMERA
– TOP VIEW –


48 SH1 OUT
47 SH2 OUT
46 SH3 OUT
45 NC
44 NC
43 VDD (+5V)
42 PBLK OUT
41 CLP3 OUT
40 CLP1 OUT
39 CLP2 OUT
38 CLSG IN
37 HTSG IN
1 SP3 OUT
2 SP2 OUT
3 SP1 OUT
4 SHD OUT
5 SHP OUT
6 Vss (GND)
7 XPG OUT
8 XH2 OUT
9 XH1 OUT
10 PS OUT
11 XSG1 OUT
12 XSG2 OUT
36 CLOCK OUT
35 HD IN
34 VD IN
33 XCK OUT
32 CK IN
31 Vss (GND)
30 TEST IN
29 XVCT OUT
28 D1 IN
27 D2 IN
26 D3 IN
25 D4 IN
13 XV4 OUT
14 XV3 OUT
15 XV2 OUT
16 XV1 OUT
17 A2 OUT
18 A1 OUT
19 VDD (+5V)
20 A0 OUT
21 A3 OUT
22 A4 OUT
23 A5 OUT
24 A6 OUT

1-CHIP COLOR


CK
XH1
XH2
XPG
SHP
SHD
SP1
SP2
SP3
SH1
SH2
SH3

B/W, 3-CHIP COLOR

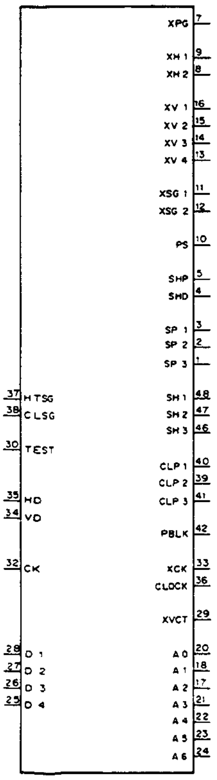

CK
XH1
XH2
XPG
SHP
SHD
SP1
SP2
SP3
SH1,SH2 Low

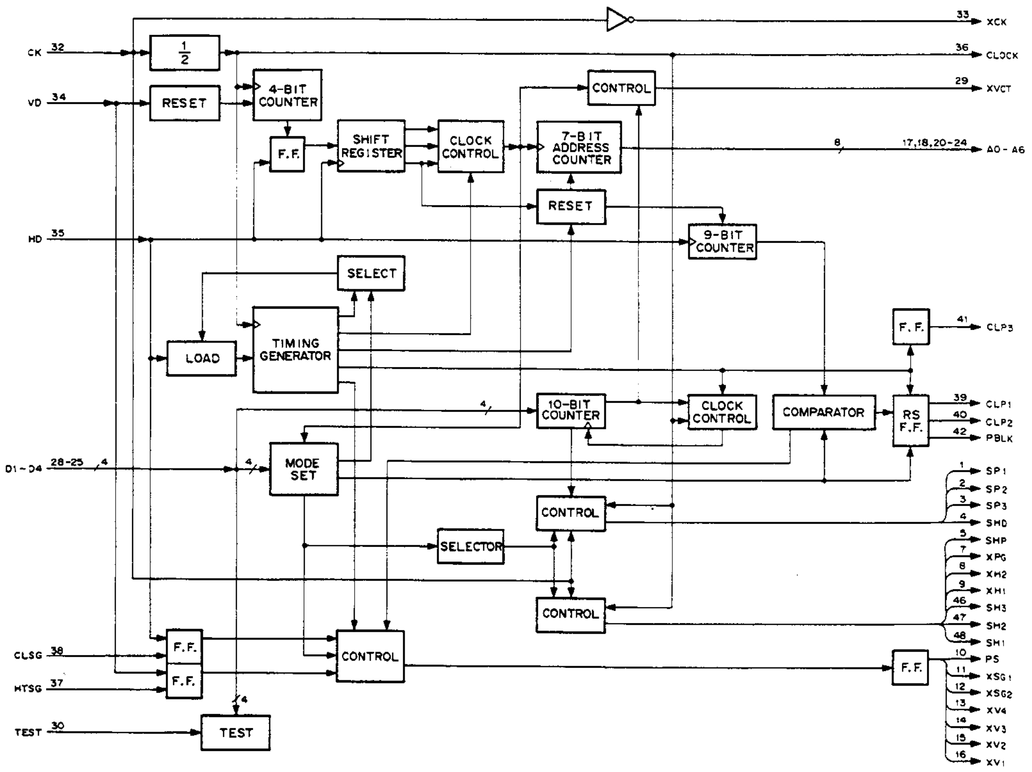
MODE SELECTION WITHOUT ROM

	HIGH (VDD) LEVEL	LOW (Vss) LEVEL
D1	※	
D2	1-CHIP COLOR	B/W, 3-CHIP COLOR
D3	FRAME	FIELD
D4	EIA (NTSC, PAL-M)	CCIR (PAL, SECAM)

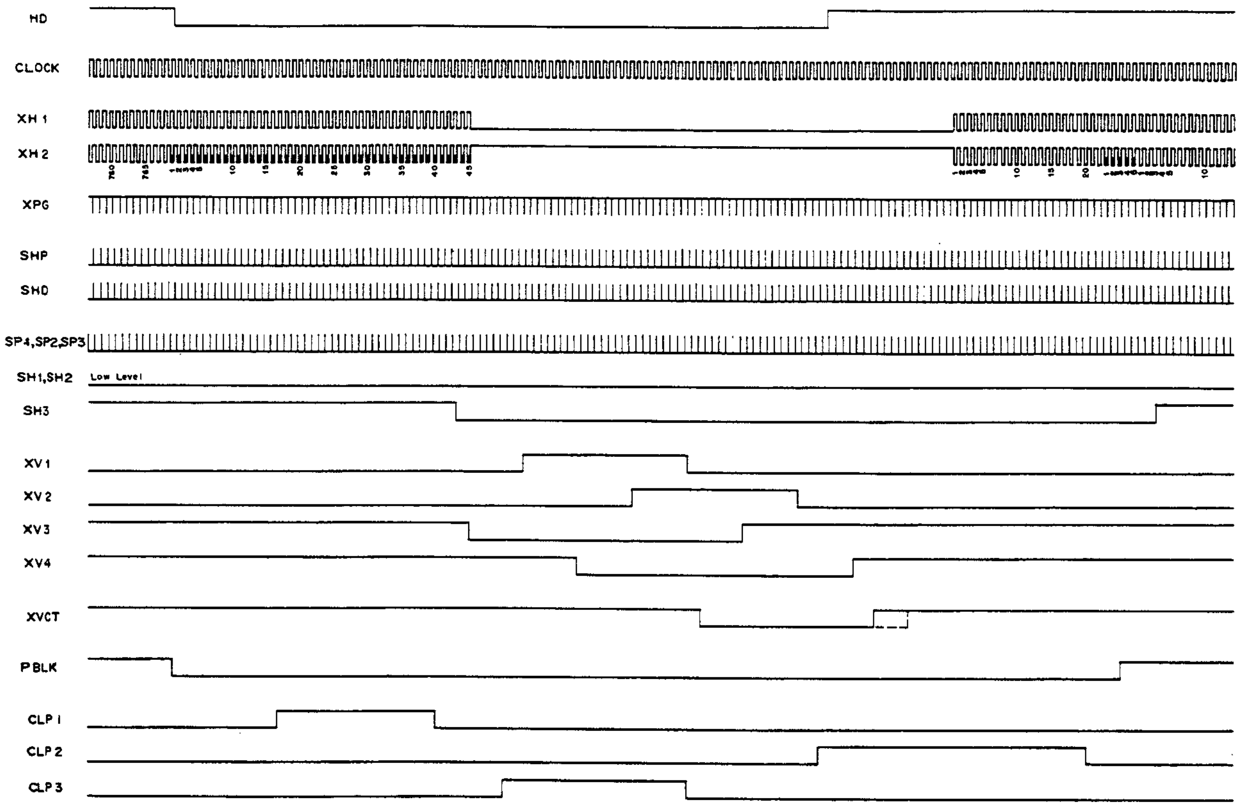
※ Connect D1 to GND without ROM (ROM OFF)

D1 – D4 : EXTERNAL ROM DATA INPUT
A0 – A6 : EXTERNAL ROM ADDRESS OUTPUT

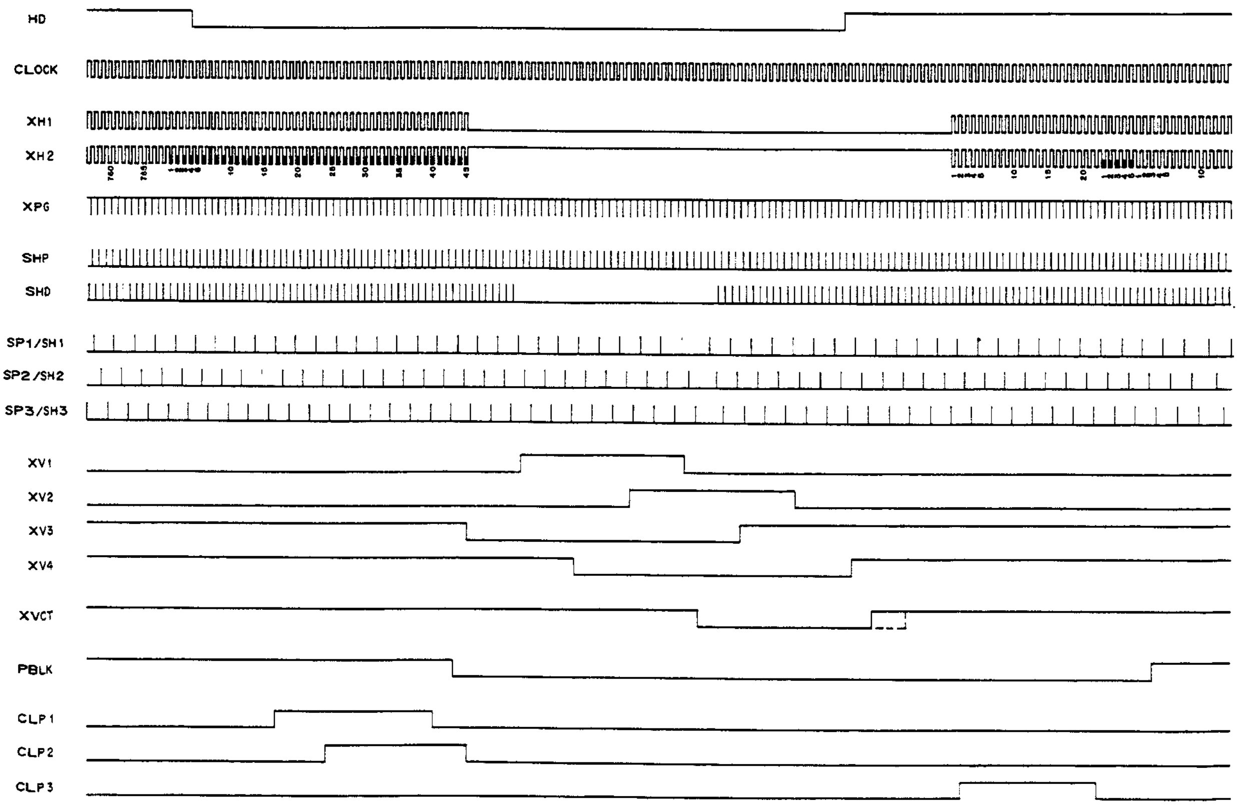

XPG 7
XH1 9
XH2 8
XV1 16
XV2 15
XV3 14
XV4 13
XSG1 11
XSG2 12
PS 10
SHP 5
SHD 4
SP1 3
SP2 2
SP3 1
37 HTSG
38 CLSG
SH1 48
SH2 47
SH3 46
30 TEST
CLP1 40
CLP2 39
CLP3 41
35 HD
34 VD
PBLK 42
32 CK
XCK 33
CLOCK 36
XVCT 29
28 D1
27 D2
26 D3
25 D4
A0 20
A1 18
A2 17
A3 21
A4 22
A5 23
A6 24


CK 32
VD 34
HD 35
D1~D4 28-25 4
CLSG 38
HTSG 37
TEST 30
1/2
RESET
4-BIT COUNTER
F.F.
SHIFT REGISTER
CLOCK CONTROL
7-BIT ADDRESS COUNTER
CONTROL
RESET
9-BIT COUNTER
SELECT
LOAD
TIMING GENERATOR
10-BIT COUNTER
CLOCK CONTROL
COMPARATOR
RS F.F.
F.F.
MODE SET
CONTROL
SELECTOR
CONTROL
F.F.
F.F.
CONTROL
F.F.
TEST
4
8
33 XCK
36 CLOCK
29 XVCT
17,18,20-24 A0 - A6
41 CLP3
39 CLP1
40 CLP2
42 PBLK
1 SP1
2 SP2
3 SP3
4 SHD
5 SHP
7 XPG
8 XH2
9 XH1
46 SH3
47 SH2
48 SH1
10 PS
11 XSG1
12 XSG2
13 XV4
14 XV3
15 XV2
16 XV1

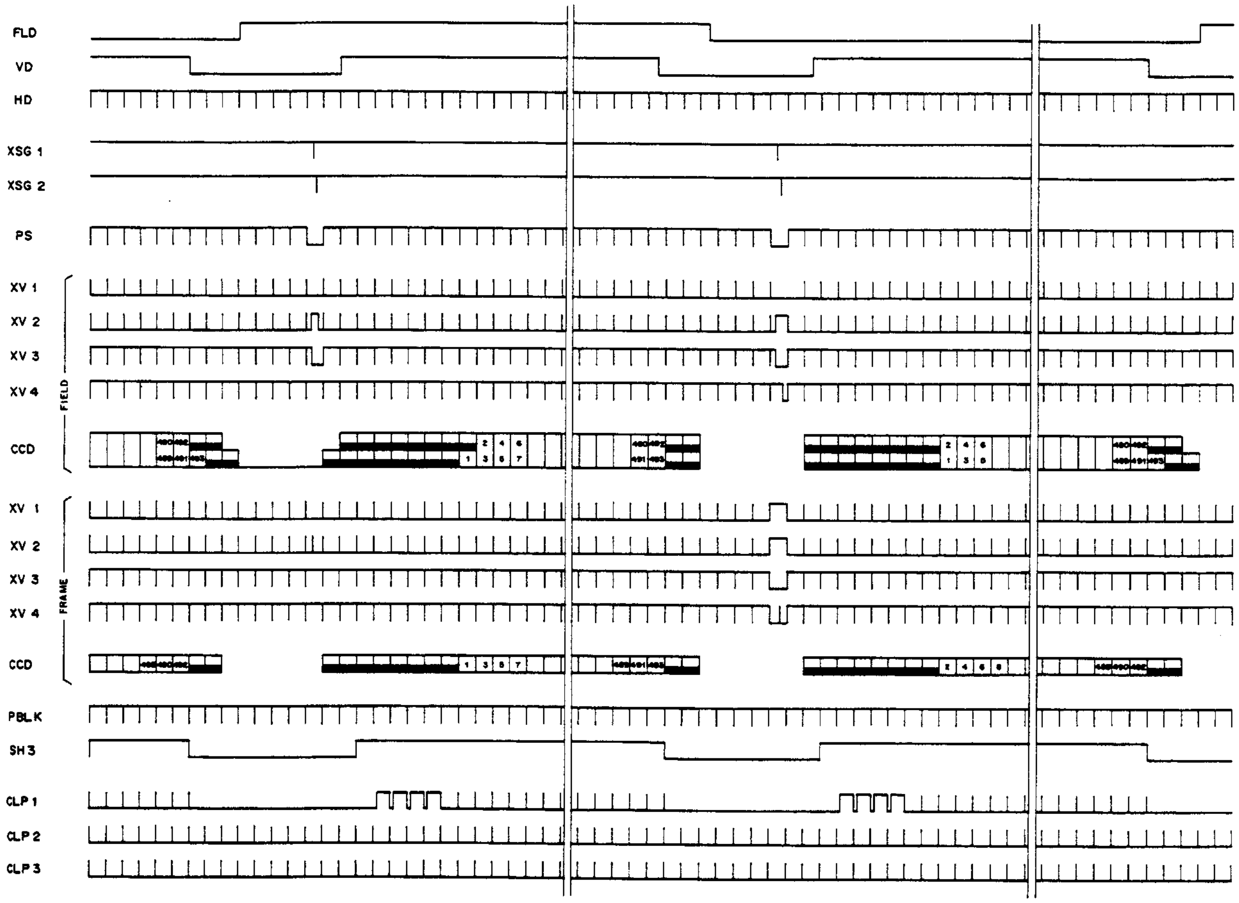
EIA (NTSC,PALM) B/W,3-CHIP COLOR


HD
CLOCK
XH1
XH2
760
765
10
15
20
25
30
35
40
45
XPG
SHP
SHD
SP4,SP2,SP3
SH1,SH2
Low Level
SH3
XV1
XV2
XV3
XV4
XVCT
PBLK
CLP1
CLP2
CLP3

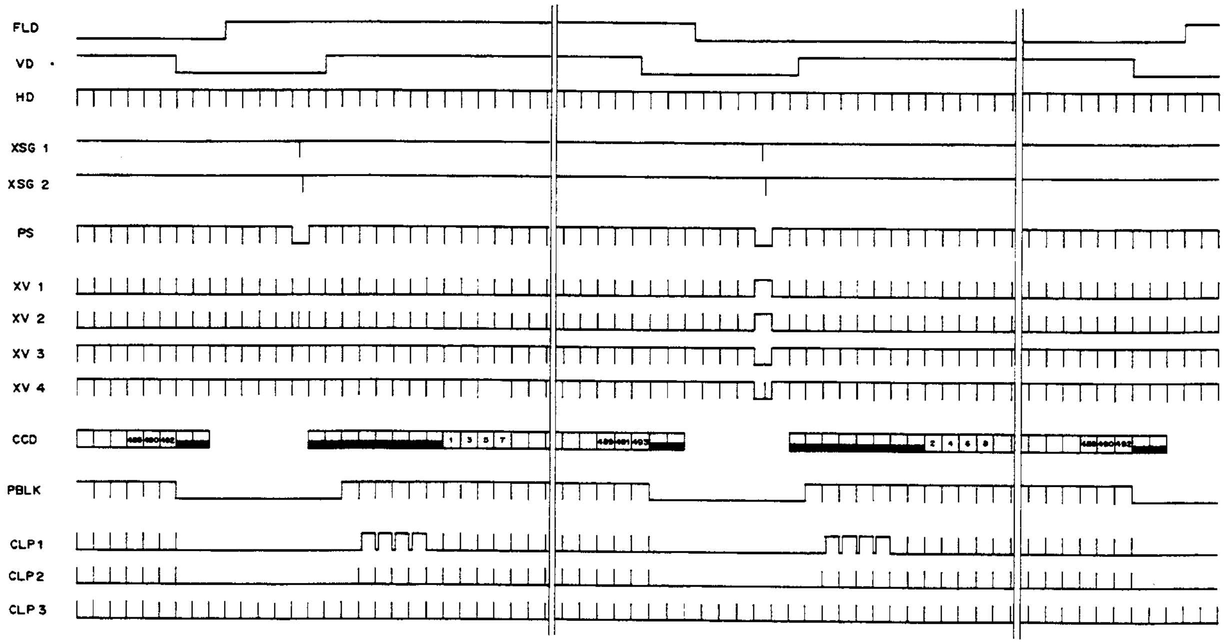
EIA(NTSC,PALM) 1-CHIP COLOR


HD
CLOCK
XH1
XH2
760
765
10
15
20
25
30
35
40
45
XPG
SHP
SHD
SP1/SH1
SP2/SH2
SP3/SH3
XV1
XV2
XV3
XV4
XVCT
PBLK
CLP1
CLP2
CLP3

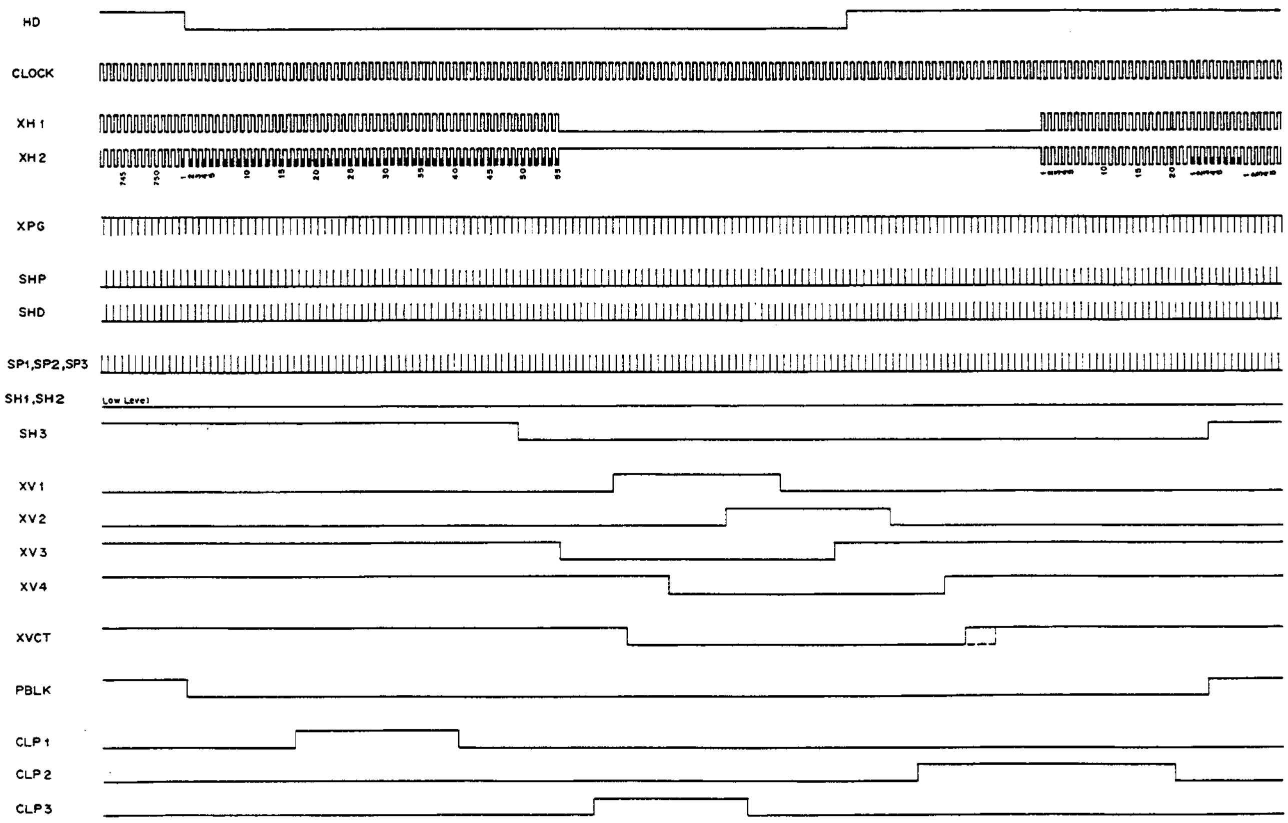
EIA(NTSC,PALM) B/W,3-CHIP COLOR


FLD
VD
HD
XSG 1
XSG 2
PS
XV 1
XV 2
XV 3
XV 4
FIELD
CCD
2 4 6
1 3 5 7
XV 1
XV 2
XV 3
XV 4
FRAME
CCD
PBLK
SH3
CLP 1
CLP 2
CLP 3

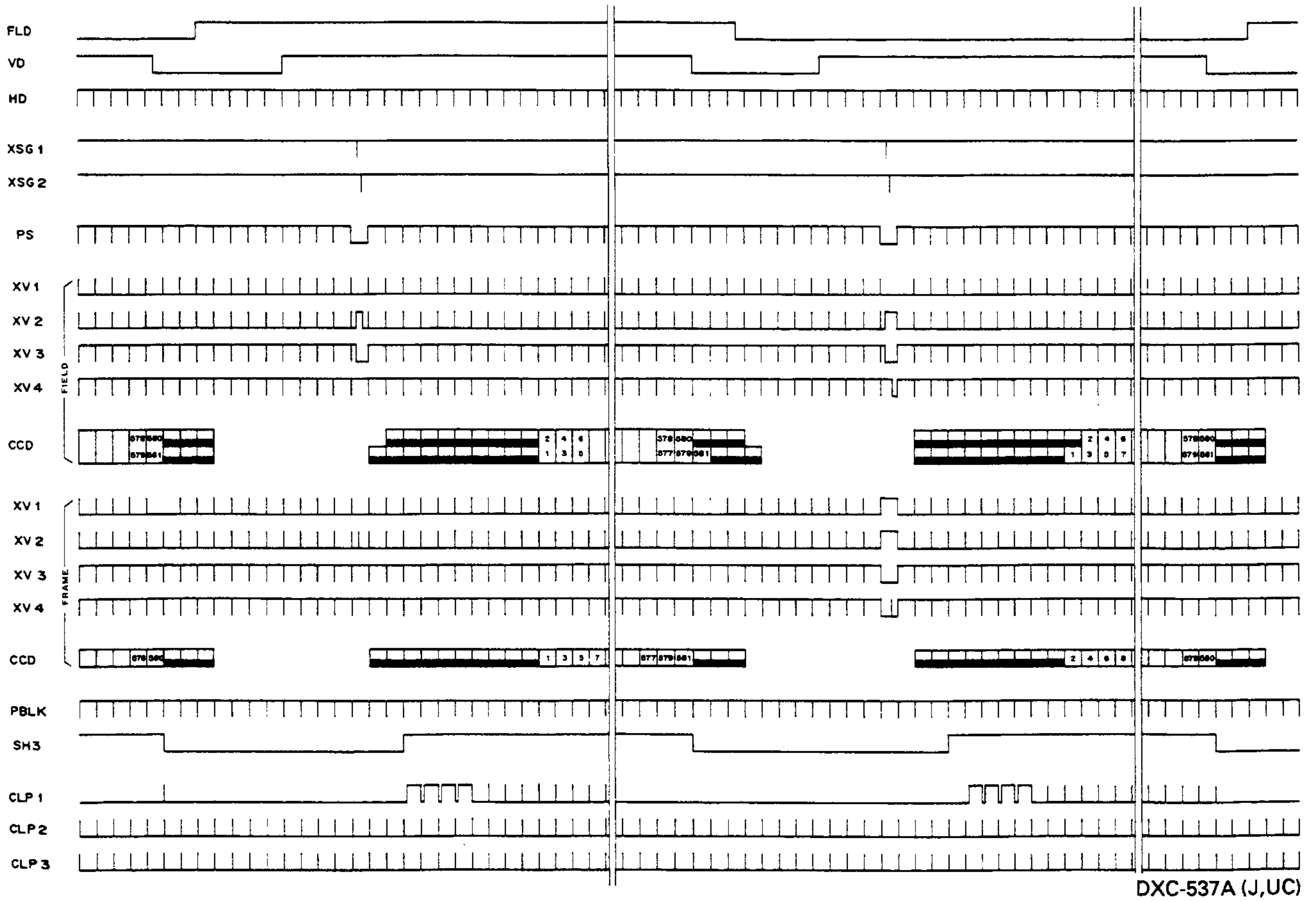
EIA(NTSC,PALM) 1-CHIP COLOR


FLD
VD
HD
XSG 1
XSG 2
PS
XV 1
XV 2
XV 3
XV 4
CCD
1 3 5 7
2 4 6 8
PBLK
CLP1
CLP2
CLP3

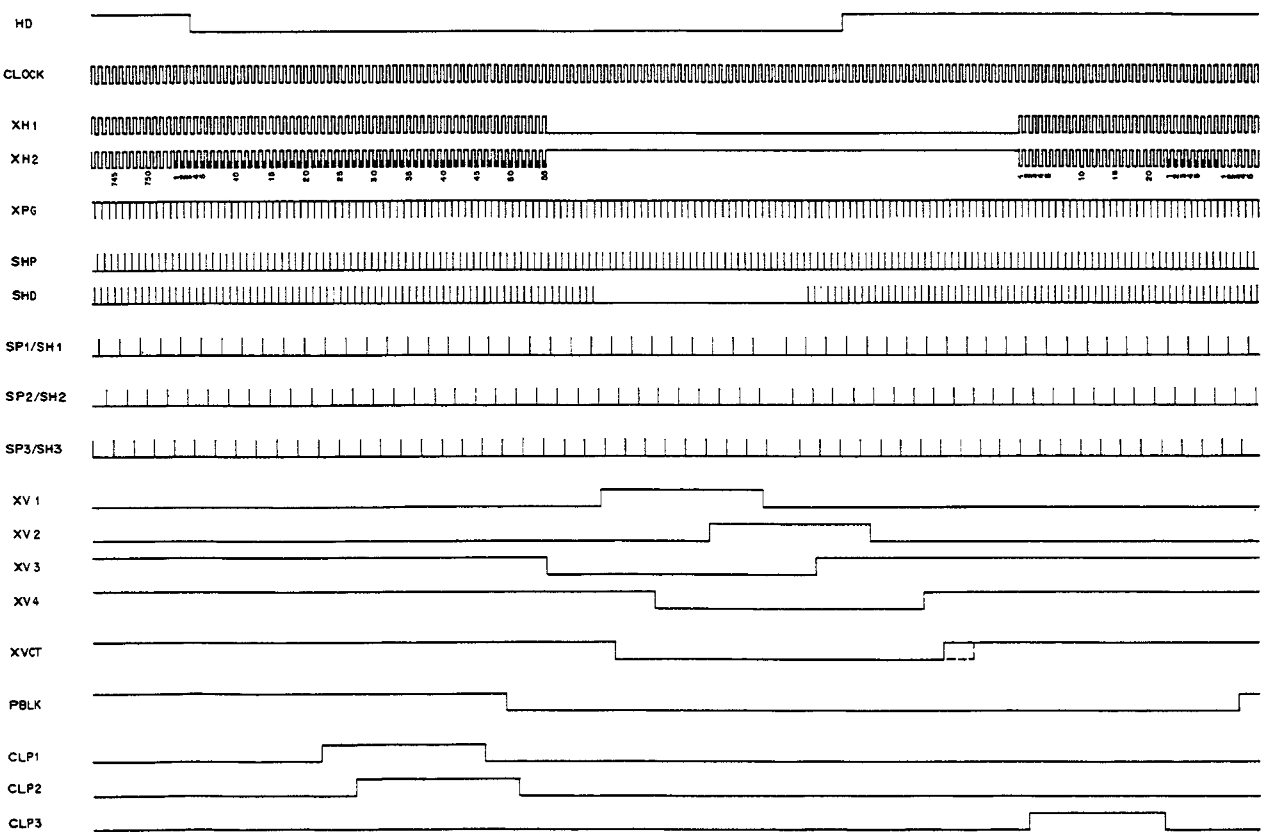
CCIR (PAL, SECAM) B/W, 3CHIP COLOR


HD
CLOCK
XH 1
XH 2
XPG
SHP
SHD
SP1,SP2,SP3
SH1,SH2
Low Level
SH3
XV 1
XV 2
XV 3
XV 4
XVCT
PBLK
CLP 1
CLP 2
CLP 3

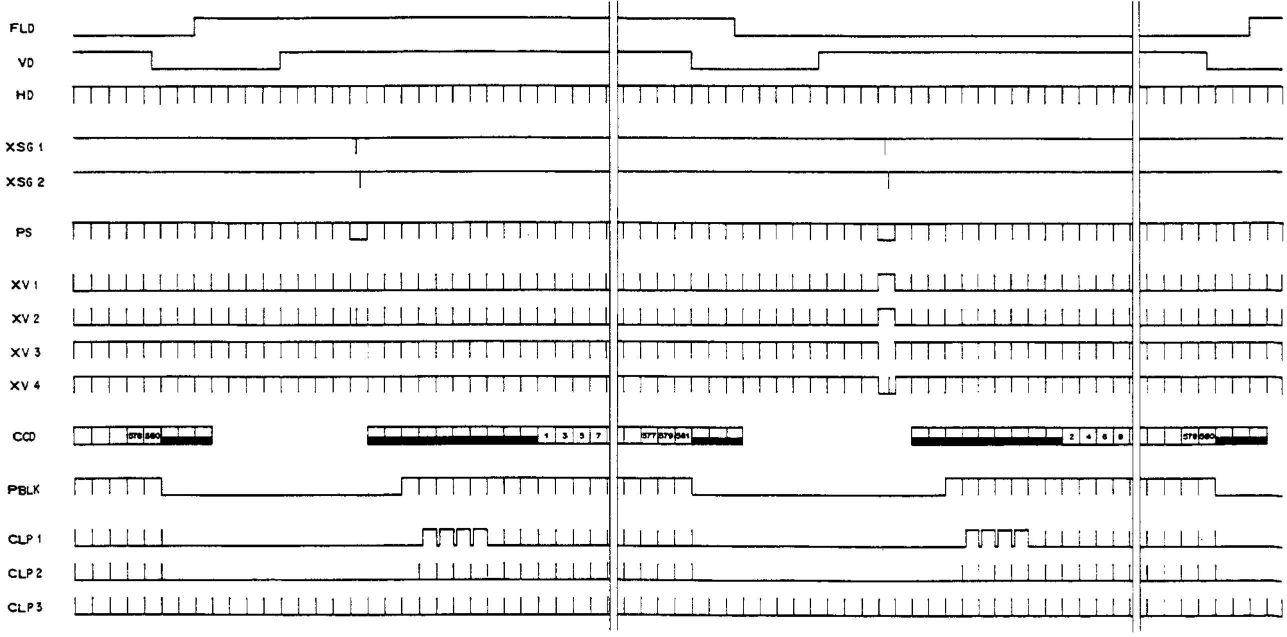
CCIR (PAL, SECAM) B/W, 3-CHIP COLOR


FLD
VD
HD
XSG 1
XSG 2
PS
XV 1
XV 2
XV 3
XV 4
FIELD
CCD
XV 1
XV 2
XV 3
XV 4
FRAME
CCD
PBLK
SH3
CLP 1
CLP 2
CLP 3

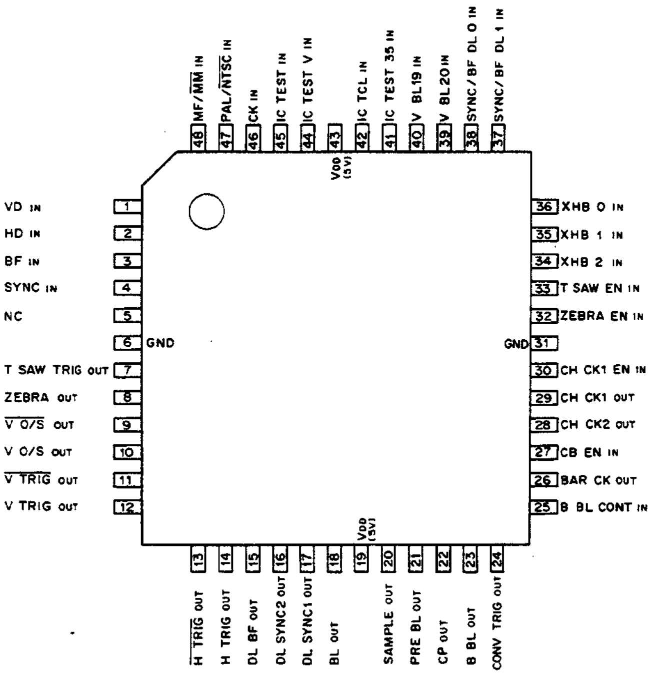
CCIR (PAL.SECAM) 1-CHIP COLOR


HD
CLOCK
XH1
XH2
745
750
5
10
15
20
25
30
35
40
45
50
55
5
10
15
20
XPG
SHP
SHD
SP1/SH1
SP2/SH2
SP3/SH3
XV1
XV2
XV3
XV4
XVCT
PBLK
CLP1
CLP2
CLP3

CCIR (PAL, SECAM) 1-CHIP COLOR


FLD
VD
HD
XSG1
XSG2
PS
XV1
XV2
XV3
XV4
CCD
578
580
1
3
5
7
577
579
581
2
4
6
8
578
580
PBLK
CLP1
CLP2
CLP3

CX7969 (SONY)
C-MOS PULSE GENERATOR
- TOP VIEW -


48 MF/$\overline{\text{MM}}$ IN
47 PAL/$\overline{\text{NTSC}}$ IN
46 CK IN
45 IC TEST IN
44 IC TEST V IN
43 VDD (5V)
42 IC TCL IN
41 IC TEST 35 IN
40 V BL19 IN
39 V BL20 IN
38 SYNC/BF DL 0 IN
37 SYNC/BF DL 1 IN
1 VD IN
2 HD IN
3 BF IN
4 SYNC IN
5 NC
6 GND
7 T SAW TRIG OUT
8 ZEBRA OUT
9 $\overline{\text{V O/S}}$ OUT
10 V O/S OUT
11 $\overline{\text{V TRIG}}$ OUT
12 V TRIG OUT
36 XHB 0 IN
35 XHB 1 IN
34 XHB 2 IN
33 T SAW EN IN
32 ZEBRA EN IN
31 GND
30 CH CK1 EN IN
29 CH CK1 OUT
28 CH CK2 OUT
27 CB EN IN
26 BAR CK OUT
25 B BL CONT IN
13 $\overline{\text{H TRIG}}$ OUT
14 H TRIG OUT
15 DL BF OUT
16 DL SYNC2 OUT
17 DL SYNC1 OUT
18 BL OUT
19 VDD (5V)
20 SAMPLE OUT
21 PRE BL OUT
22 CP OUT
23 B BL OUT
24 CONV TRIG OUT

1. SYSTEM DESIGNATION

INPUT PAL/$\overline{\text{NTSC}}$ IN	SYSTEM
1	PAL, SECAM
0	NTSC, PALM

2. TYPE OF TUBE

INPUT MF/$\overline{\text{MM}}$ IN	FUNCTION
1	MAG-STA TUBE
0	MAG-MAG TUBE

3. V BLKG WIDTH (NTSC ONLY)

INPUT		V BLKG WIDTH
V BL 19	V BL 20	
1	X	19H
0	1	20H
0	0	21H

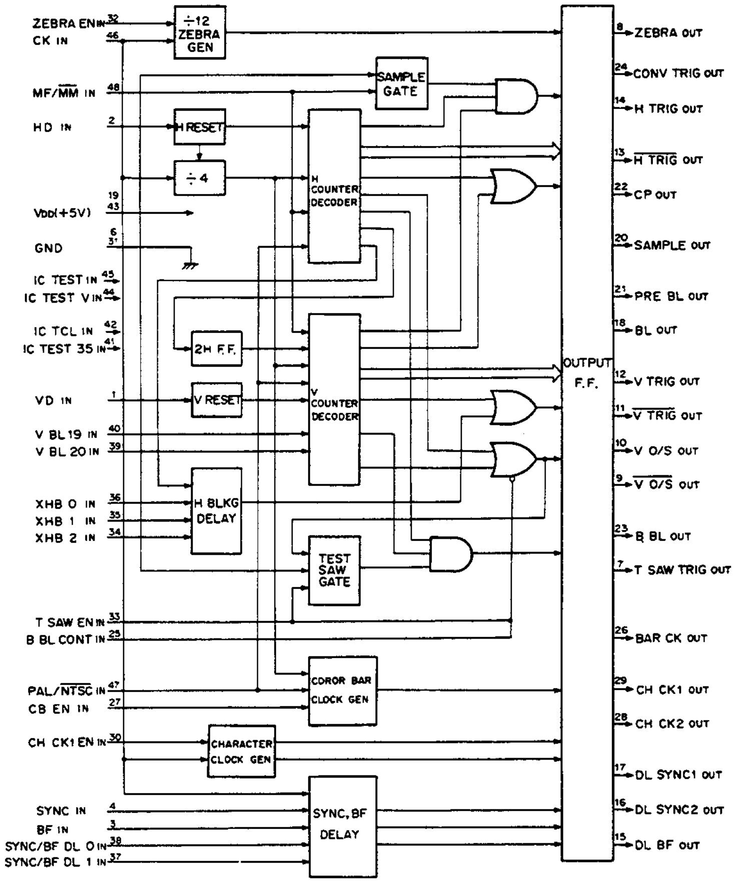
4. H BLKG WIDTH

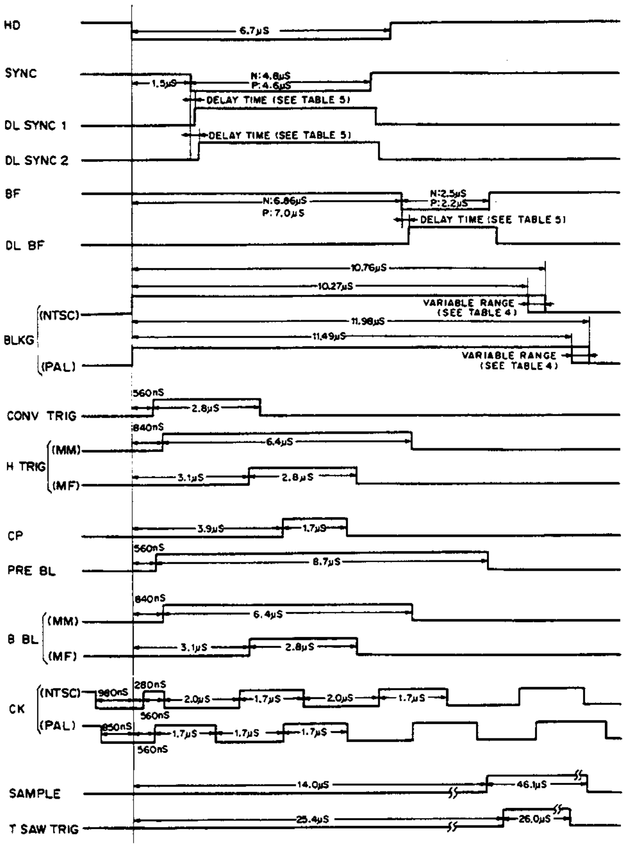
INPUT			BLKG WIDTH (μS)	
XHB2	XHB1	XHB0	NTSC	PAL
1	1	1	10.27	11.49
1	1	0	10.34	11.56
1	0	1	10.41	11.63
1	0	0	10.48	11.70
0	1	1	10.55	11.77
0	1	0	10.62	11.84
0	0	1	10.69	11.91
0	0	0	10.76	11.98

5. DELAY TIME

INPUT		DELAY TIME (nS)		
SYNC/BF DL1	SYNC/BF DL2	DL SYNC 1	DL SYNC 2	DL BF
1	1	140	210	140
1	0	210	280	210
0	1	630	700	630
0	0	700	770	700

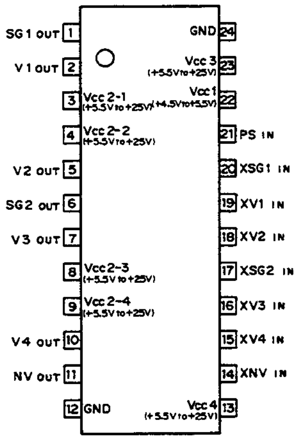
1; HIGH LEVEL
0; LOW LEVEL
X; DON'T CARE


ZEBRA EN IN 32
CK IN 46
MF/$\overline{\text{MM}}$ IN 48
HD IN 2
VDD(+5V) 19 43
GND 6 31
IC TEST IN 45
IC TEST V IN 44
IC TCL IN 42
IC TEST 35 IN 41
VD IN 1
V BL19 IN 40
V BL 20 IN 39
XHB 0 IN 36
XHB 1 IN 35
XHB 2 IN 34
T SAW EN IN 33
B BL CONT IN 25
PAL/$\overline{\text{NTSC}}$ IN 47
CB EN IN 27
CH CK1 EN IN 30
SYNC IN 4
BF IN 3
SYNC/BF DL 0 IN 38
SYNC/BF DL 1 IN 37
÷12 ZEBRA GEN
SAMPLE GATE
H RESET
÷4
H COUNTER DECODER
2H F.F.
V RESET
V COUNTER DECODER
H BLKG DELAY
TEST SAW GATE
COROR BAR CLOCK GEN
CHARACTER CLOCK GEN
SYNC, BF DELAY
OUTPUT F.F.
8 ZEBRA OUT
24 CONV TRIG OUT
14 H TRIG OUT
13 $\overline{\text{H TRIG}}$ OUT
22 CP OUT
20 SAMPLE OUT
21 PRE BL OUT
18 BL OUT
12 V TRIG OUT
11 $\overline{\text{V TRIG}}$ OUT
10 V O/S OUT
9 $\overline{\text{V O/S}}$ OUT
23 B BL OUT
7 T SAW TRIG OUT
26 BAR CK OUT
29 CH CK1 OUT
28 CH CK2 OUT
17 DL SYNC1 OUT
16 DL SYNC2 OUT
15 DL BF OUT

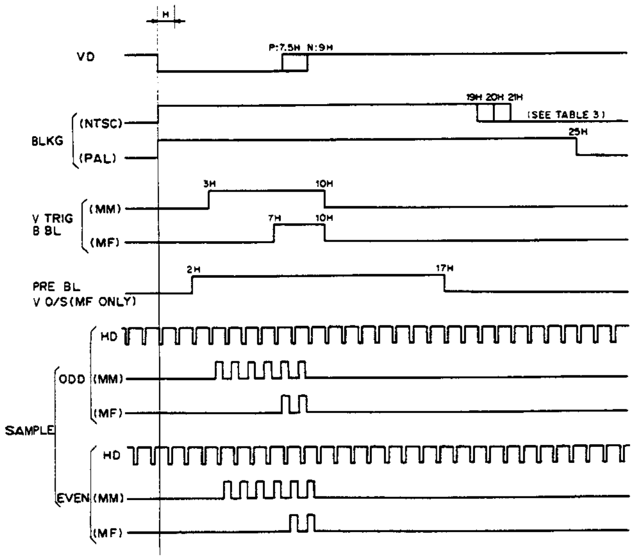

HD
6.7μS
SYNC
1.5μS
N:4.8μS
P:4.6μS
DELAY TIME (SEE TABLE 5)
DL SYNC 1
DELAY TIME (SEE TABLE 5)
DL SYNC 2
BF
N:6.86μS
P:7.0μS
N:2.5μS
P:2.2μS
DELAY TIME (SEE TABLE 5)
DL BF
10.76μS
10.27μS
VARIABLE RANGE (SEE TABLE 4)
(NTSC)
BLKG
11.98μS
11.49μS
VARIABLE RANGE (SEE TABLE 4)
(PAL)
560nS
2.8μS
CONV TRIG
840nS
6.4μS
H TRIG
(MM)
(MF)
3.1μS
2.8μS
CP
3.9μS
1.7μS
PRE BL
560nS
8.7μS
840nS
6.4μS
B BL
(MM)
(MF)
3.1μS
2.8μS
CK
(NTSC)
980nS
280nS
560nS
2.0μS
1.7μS
2.0μS
1.7μS
(PAL)
850nS
560nS
1.7μS
1.7μS
1.7μS
SAMPLE
14.0μS
46.1μS
T SAW TRIG
25.4μS
26.0μS

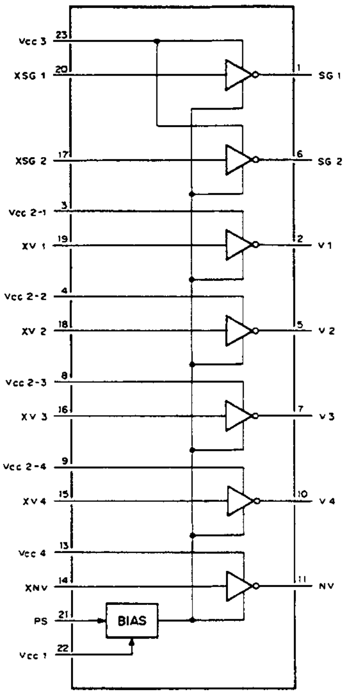
CXA1065N (SONY) FLAT PACKAGE

INVERTING DRIVER FOR CCD CLOCK WITH POWER SAVE
– TOP VIEW –

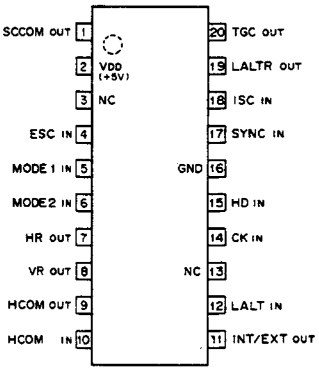

SG1 OUT 1
V1 OUT 2
3 Vcc 2-1 (+5.5V to +25V)
4 Vcc 2-2 (+5.5V to +25V)
V2 OUT 5
SG2 OUT 6
V3 OUT 7
8 Vcc 2-3 (+5.5V to +25V)
9 Vcc 2-4 (+5.5V to +25V)
V4 OUT 10
NV OUT 11
12 GND
GND 24
Vcc 3 (+5.5V to +25V) 23
Vcc 1 (+4.5V to +5.5V) 22
21 PS IN
20 XSG1 IN
19 XV1 IN
18 XV2 IN
17 XSG2 IN
16 XV3 IN
15 XV4 IN
14 XNV IN
Vcc 4 (+5.5V to +25V) 13

XV1-XV4 ; VERTICAL REGISTER TRANSMISSION CLOCK INPUT
V1 - V4 ; VERTICAL REGISTER TRANSMISSION CLOCK OUTPUT
XSG1, XSG2 ; SENSOR GATE PULSE INPUT
SG1, SG2 ; SENSOR GATE PULSE OUTPUT
XNV ; DRIVER INPUT
NV ; DRIVER OUTPUT
PS ; POWER SAVE INPUT
Vcc 1 ; BIAS VOLTAGE
Vcc 2-1 ; V1 OUTPUT PULSE VOLTAGE
Vcc 2-2 ; V2 OUTPUT PULSE VOLTAGE
Vcc 2-3 ; V3 OUTPUT PULSE VOLTAGE
Vcc 2-4 ; V4 OUTPUT PULSE VOLTAGE
Vcc 3 ; SG1, SG2 OUTPUT PULSE VOLTAGE
Vcc 4 ; NV OUTPUT PULSE VOLTAGE

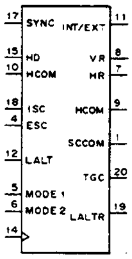

H
VD
P:7.5H N:9H
19H 20H 21H
(SEE TABLE 3)
BLKG
(NTSC)
(PAL)
25H
V TRIG
B BL
(MM)
(MF)
3H
10H
7H
10H
PRE BL
V O/S (MF ONLY)
2H
17H
SAMPLE
ODD
EVEN
HD
(MM)
(MF)


Vcc 3 23
XSG 1 20
XSG 2 17
Vcc 2-1 3
XV 1 19
Vcc 2-2 4
XV 2 18
Vcc 2-3 8
XV 3 16
Vcc 2-4 9
XV 4 15
Vcc 4 13
XNV 14
PS 21
Vcc 1 22
BIAS
1 SG 1
6 SG 2
2 V 1
5 V 2
7 V 3
10 V 4
11 NV

CXD1216M (SONY) FLAT PACKAGE
C-MOS GENLOCK DRIVER
- TOP VIEW -



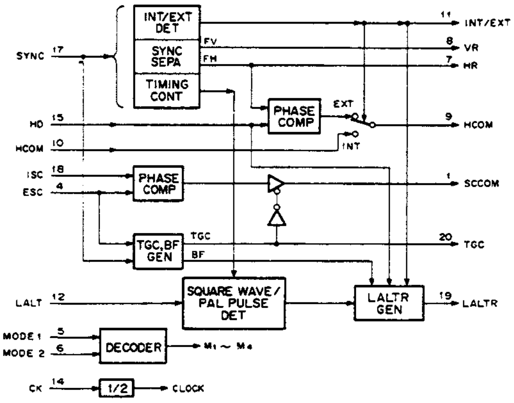
SCCOM OUT 1
VDD (+5V) 2
NC 3
ESC IN 4
MODE 1 IN 5
MODE2 IN 6
HR OUT 7
VR OUT 8
HCOM OUT 9
HCOM IN 10
INT/EXT OUT 11
LALT IN 12
NC 13
CK IN 14
HD IN 15
GND 16
SYNC IN 17
ISC IN 18
LALTR OUT 19
TGC OUT 20



17 SYNC
INT/EXT 11
15 HD
10 HCOM
VR 8
HR 7
18 ISC
4 ESC
HCOM 9
SCCOM 1
12 LALT
TGC 20
5 MODE 1
6 MODE 2
LALTR 19
14

INPUT		MODE	SYSTEM
MODE1	MODE2		
0	0	M1	PAL-VBS
1	0	M2	PALM-VBS
0	1	M3	PAL,SECAM-VS/SC/LALT
1	1	M4	NTSC-VBS,NTSC-VS/SC PALM-VS/SC/LALT

0 : LOW LEVEL
1 : HIGH LEVEL



SYNC 17
INT/EXT DET
SYNC SEPA
TIMING CONT
FV
FH
11 INT/EXT
8 VR
7 HR
HD 15
HCOM 10
PHASE COMP
EXT
INT
9 HCOM
ISC 18
ESC 4
PHASE COMP
1 SCCOM
TGC,BF GEN
TGC
BF
20 TGC
LALT 12
SQUARE WAVE/ PAL PULSE DET
LALTR GEN
19 LALTR
MODE 1 5
MODE 2 6
DECODER
M1 ~ M4
CK 14
1/2
CLOCK

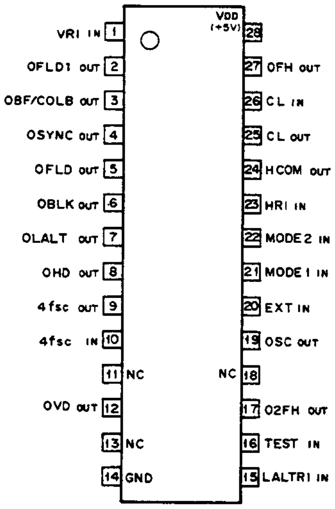
INPUT

CK	: 4fsc CLOCK INPUT
ESC	: SC/COLOR BURST
HCOM	: PHASE COMPARATE FROM CXD1217
HD	: H DRIVE FROM CXD1217
ISC	: SUBCARRIER FROM CXD1217
LALT	: LALT FROM REFERENCE SIGNAL GENERATOR
MODE1,2	: SYSTEM SELECT
SYNC	: SYNC FROM REFERENCE SIGNAL GENERATOR

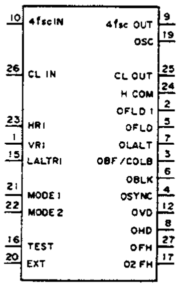
OUTPUT

HCOM	: PHASE COMPARATOR HR WITH HD
HR	: f_H OF SYNC SEPARATE
INT/EXT	: INTERNAL/EXTERNAL SPECIFIED
LALTR	: LINE CHANGE RESET
SCCOM	: PHASE COMPARATOR ESC WITH ISC
TGC	: TRISTATE CONTROL
VR	: f_V OF SYNC SEPARATE

CXD1217M (SONY) FLAT PACKAGE
C-MOS SYNC GENERATOR
- TOP VIEW -



VRI IN 1
OFLD1 OUT 2
OBF/COLB OUT 3
OSYNC OUT 4
OFLD OUT 5
OBLK OUT 6
OLALT OUT 7
OHD OUT 8
4fsc OUT 9
4fsc IN 10
11 NC
OVD OUT 12
13 NC
14 GND
LALTRI IN 15
TEST IN 16
O2FH OUT 17
NC 18
OSC OUT 19
EXT IN 20
MODE 1 IN 21
MODE 2 IN 22
HRI IN 23
HCOM OUT 24
CL OUT 25
CL IN 26
OFH OUT 27
VDD (+5V) 28

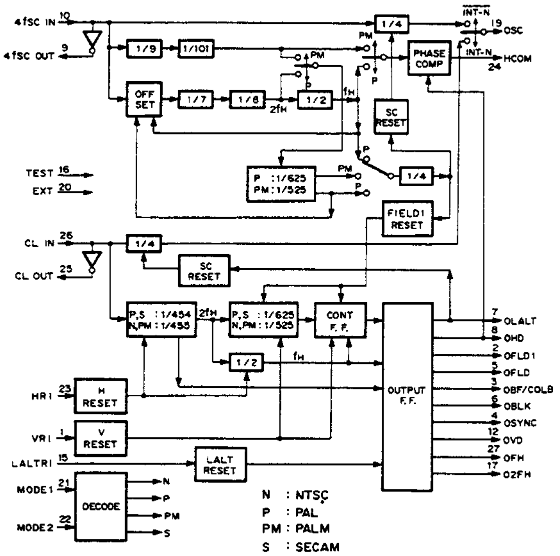


10 4fscIN
4fsc OUT 9
OSC 19
26 CL IN
CL OUT 25
H COM 24
OFLD 1 2
OFLD 5
OLALT 7
OBF/COLB 3
OBLK 6
OSYNC 4
OVD 12
OHD 8
OFH 27
O2FH 17
23 HRI
1 VRI
15 LALTRI
21 MODE 1
22 MODE 2
16 TEST
20 EXT

SYSTEM	4fsc	CLOCK
NTSC	$910f_H$	$910f_H$
PAL	$1135f_H+2f_V$	$908f_H$
PALM	$909f_H$	$910f_H$
SECAM	—	$908f_H$

INPUT		SYSTEM
MODE1	MODE2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

0 ; LOW LEVEL
1 ; HIGH LEVEL



4fsc IN 10
4fsc OUT 9
1/9
1/101
PM
1/4
INT-N
19 OSC
PHASE COMP
INT-N
HCOM 24
OFF SET
1/7
1/8
2fH
1/2
fH
P
SC RESET
TEST 16
EXT 20
P :1/625 PM:1/525
PM
1/4
FIELD1 RESET
CL IN 26
CL OUT 25
1/4
SC RESET
P,S :1/454 N,PM :1/455
2fH
P,S :1/625 N,PM :1/525
CONT F.F.
1/2
fH
OUTPUT F.F.
7 OLALT
8 OHD
2 OFLD1
5 OFLD
3 OBF/COLB
6 OBLK
4 OSYNC
12 OVD
27 OFH
17 O2FH
HRI 23
H RESET
VRI 1
V RESET
LALTRI 15
LALT RESET
MODE1 21
MODE2 22
DECODE
N
P
PM
S

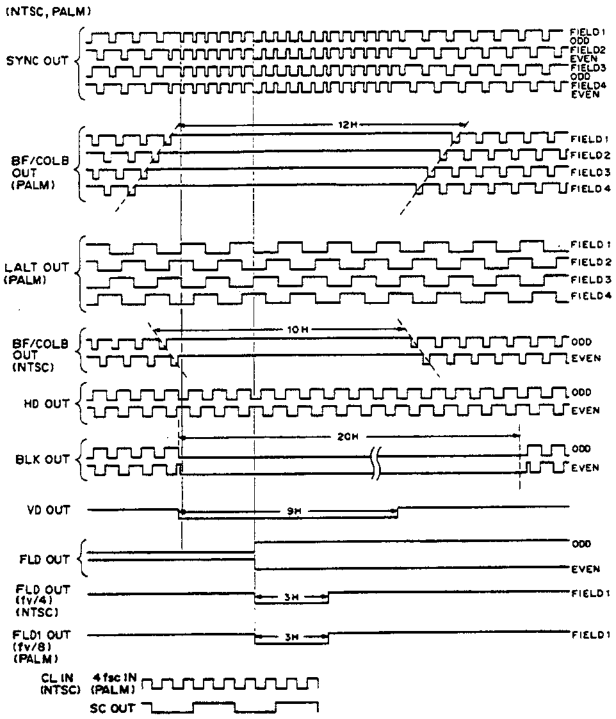
N : NTSC
P : PAL
PM : PALM
S : SECAM

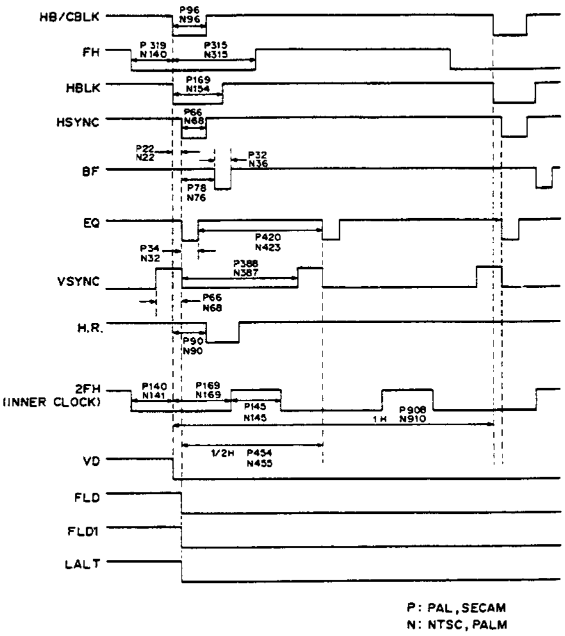
INPUT

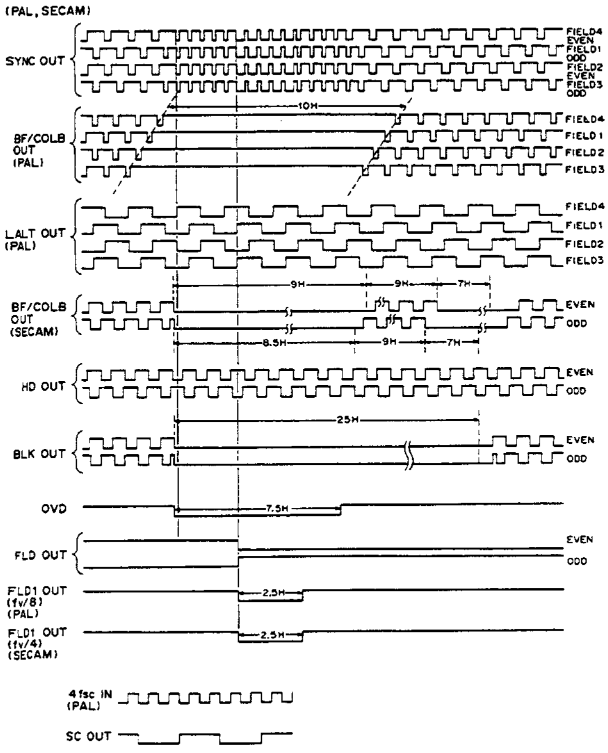
4fSC IN	: 4fSC INPUT
CL IN	: CLOCK INPUT
EXT	: SYNC MODE SELECT (L : INTERNAL/H : EXTERNAL)
HRI	: H RESET
LALTRI	: LINE CHANGE RESET
MODE 1,2	: SYSTEM SELECT
VRI	: V RESET

OUT PUT

4fSC OUT	: 4fSC OUTPUT
CL OUT	: CLOCK OUTPUT
HCOM	: PHASE COMPARATOR
O2fH	: 2fH OUTPUT
OBF/COLB	: BURST FLAG/COLOR BLANKING
OBLK	: COMPOSITE BLANKING
OFH	: H FREQUENCE
OFLD	: EVEN, ODD
OFLD1	: FIELD1
OHD	: H DRIVE
OLALT	: LINE CHANGE
OSC	: SUBCARRIER
OSYNC	: COMPOSITE SYNC
OVD	: V DRIVE


(NTSC, PALM)
SYNC OUT
FIELD1 ODD
FIELD2 EVEN
FIELD3 ODD
FIELD4 EVEN
12H
BF/COLB OUT (PALM)
LALT OUT (PALM)
10H
BF/COLB OUT (NTSC)
ODD
EVEN
HD OUT
20H
BLK OUT
VD OUT
9H
FLD OUT
FLD OUT (fv/4) (NTSC)
3H
FLD1 OUT (fv/8) (PALM)
CL IN (NTSC)
4fsc IN (PALM)
SC OUT

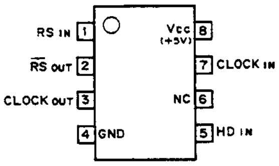

HB/CBLK
P96 N96
FH
P319 N140
P315 N315
HBLK
P169 N154
HSYNC
P66 N68
BF
P22 N22
P32 N36
P78 N76
EQ
P420 N423
P34 N32
P388 N387
VSYNC
P66 N68
H.R.
P90 N90
2FH (INNER CLOCK)
P140 N141
P169 N169
P145 N145
1H
P908 N910
1/2H
P454 N455
VD
FLD
FLD1
LALT
P: PAL,SECAM
N: NTSC, PALM

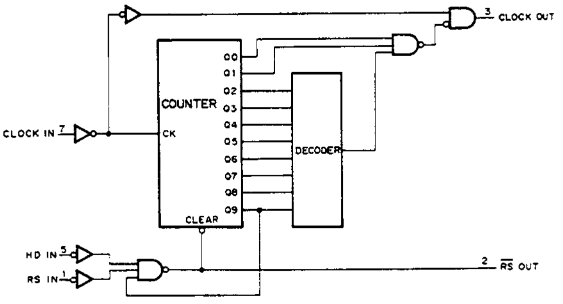

(PAL, SECAM)
SYNC OUT
FIELD4 EVEN
FIELD1 ODD
FIELD2 EVEN
FIELD3 ODD
10H
BF/COLB OUT (PAL)
FIELD4
FIELD1
FIELD2
FIELD3
LALT OUT (PAL)
9H
7H
BF/COLB OUT (SECAM)
EVEN
ODD
8.5H
HD OUT
25H
BLK OUT
OVD
7.5H
FLD OUT
FLD1 OUT (fv/8) (PAL)
2.5H
FLD1 OUT (fv/4) (SECAM)
4fsc IN (PAL)
SC OUT

CXD1361M (TI) FLAT PACKAGE

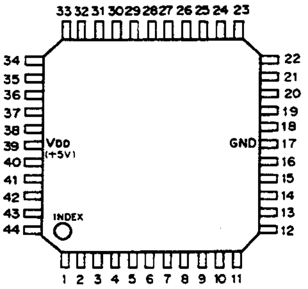
CLOCK CONTROLLER

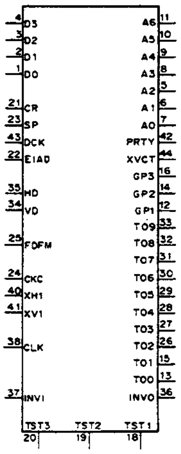
– TOP VIEW –


RS IN 1
RS OUT 2
CLOCK OUT 3
4 GND
VCC (+5V) 8
7 CLOCK IN
NC 6
5 HD IN


3 CLOCK OUT
CLOCK IN 7
COUNTER
CK
Q0
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
CLEAR
DECODER
HD IN 5
RS IN 1
2 RS OUT

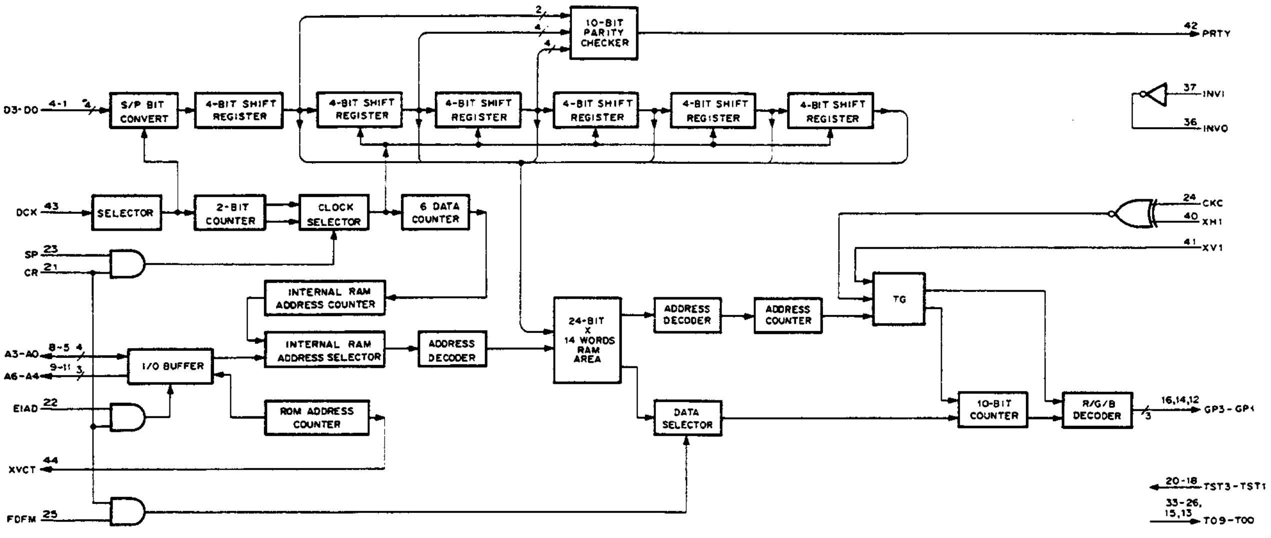
CXD8095Q (SONY) FLAT PACKAGE
C-MOS GATE ARRAY
– TOP VIEW –

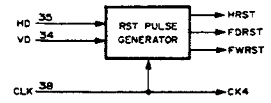

33 32 31 30 29 28 27 26 25 24 23
34
35
36
37
38
39
40
41
42
43
44
22
21
20
19
18
17
16
15
14
13
12
VDD
(+5V)
GND
INDEX
1 2 3 4 5 6 7 8 9 10 11


4 D3
3 D2
2 D1
1 D0
21 CR
23 SP
43 DCK
22 EIAD
35 HD
34 VD
25 FDFM
24 CKC
40 XH1
41 XV1
38 CLK
37 INVI
A6 11
A5 10
A4 9
A3 8
A2 5
A1 6
A0 7
PRTY 42
XVCT 44
GP3 16
GP2 14
GP1 12
TO9 33
TO8 32
TO7 31
TO6 30
TO5 29
TO4 28
TO3 27
TO2 26
TO1 15
TO0 13
INVO 36
TST3 20
TST2 19
TST1 18

(VDD = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I	D0	12	O	GP1	23	I	SP	34	I	VD
2	I	D1	13	O	TO0	24	I	CKC	35	I	HD
3	I	D2	14	O	GP2	25	I	FDFM	36	O	INVO
4	I	D3	15	O	TO1	26	O	TO2	37	I	INVI
5	I/O	A2	16	O	GP3	27	O	TO3	38	I	CLK
6	I/O	A1	17	–	GND	28	O	TO4	39	–	VDD
7	I/O	A0	18	I	TST1	29	O	TO5	40	I	XH1
8	I/O	A3	19	I	TST2	30	O	TO6	41	I	XV1
9	O	A4	20	I	TST3	31	O	TO7	42	O	PRTY
10	O	A5	21	I	CR	32	O	TO8	43	I	DCK
11	O	A6	22	I	EIAD	33	O	TO9	44	O	XVCT


10-BIT PARITY CHECKER
2
4
4
42 PRTY
D3-D0 4-1 4
S/P BIT CONVERT
4-BIT SHIFT REGISTER
4-BIT SHIFT REGISTER
4-BIT SHIFT REGISTER
4-BIT SHIFT REGISTER
4-BIT SHIFT REGISTER
4-BIT SHIFT REGISTER
37 INVI
36 INVO
DCK 43
SELECTOR
2-BIT COUNTER
CLOCK SELECTOR
6 DATA COUNTER
24 CKC
40 XH1
41 XV1
SP 23
CR 21
INTERNAL RAM ADDRESS COUNTER
INTERNAL RAM ADDRESS SELECTOR
ADDRESS DECODER
24-BIT x 14 WORDS RAM AREA
ADDRESS DECODER
ADDRESS COUNTER
TG
A3-A0 8-5 4
A6-A4 9-11 3
I/O BUFFER
EIAD 22
ROM ADDRESS COUNTER
DATA SELECTOR
10-BIT COUNTER
R/G/B DECODER
3
16,14,12 GP3 - GP1
XVCT 44
20-18 TST3-TST1
33-26, 15,13 TO9-TO0
FDFM 25


HD 35
VD 34
RST PULSE GENERATOR
HRST
FDRST
FWRST
CLK 38
CK4

INPUT

CKC	: XH1 ACTIVE EDGE DECISION
CLK	: SYSTEM CLOCK
CR	: COMPENSATION DATA SELECT (H : u-COM MODE, L : NORMAL MODE)
D0 – D3	: 4-BIT PARALLEL DATA
DCLK	: DATA INPUTS STROVE PULSE
EIAD	: H : EXT ADDRESS, L : INT ADDRESS
FDFM	: FRAME READ/FIELD READ SWITCH (H : FIELD READ)
HD	: HORIZONTAL DRIVE
INVI	: INVERTER
SP	: INPUT DATA SERIAL/PARALLEL SWITCH (H : SERIAL)
TST1 – TST3	: TEST MODE SELECT
VD	: VERTICAL DRIVE
XH1	: CLOCK FOR COMPENSATION DATA
XV1	: LINE COUNTER INPUT TERMINAL

OUTPUT

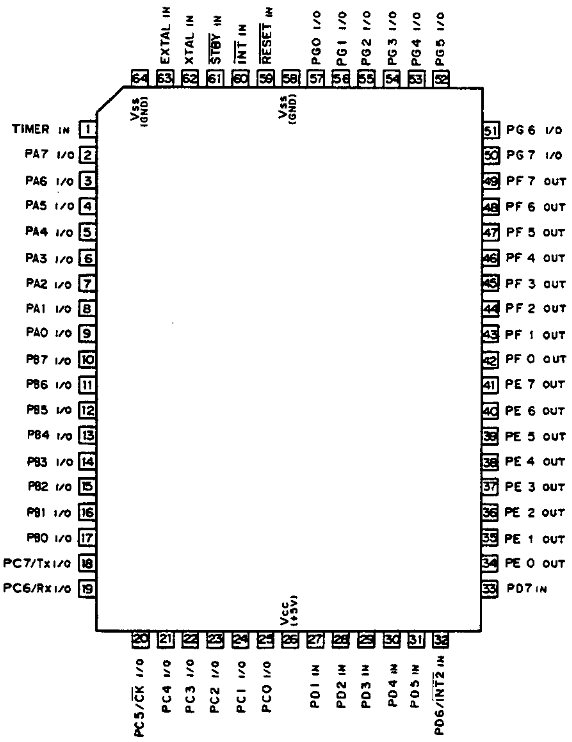
A4 – A6	: DATA ADDRESS
GP1 – GP3	: GATE PULSE FOR COMPENSATION DATA (R, G, B-CH)
INVO	: INVERTER
PRTY	: 12-BIT DATA PARITY CHECK (H : EVEN)
TO0 – TO9	: TEST TERMINAL FOR INTERNAL DATA OUTPUTS
XVCT	: ROM POWER VOLTAGE CONTROL TERMINAL

INPUT/OUTPUT

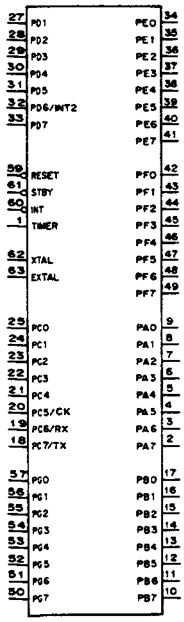
A0 – A3	: DATA ADDRESS OUTPUTS (DATA ADDRESS INPUTS : u-COM MODE)

HD6305Y0E91F (HITACHI) FLAT PACKAGE
HD6305Y0E92F (HITACHI) FLAT PACKAGE

C-MOS 8-BIT MICROPROCESSOR UNIT
– TOP VIEW –

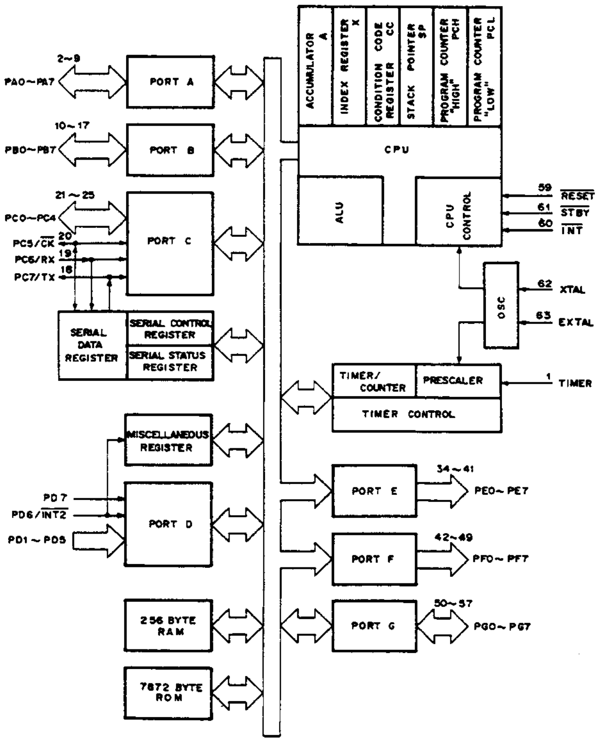


64
63 EXTAL IN
62 XTAL IN
61 STBY IN
60 INT IN
59 RESET IN
58
57 PG0 I/O
56 PG1 I/O
55 PG2 I/O
54 PG3 I/O
53 PG4 I/O
52 PG5 I/O
Vss (GND)
Vss (GND)
TIMER IN 1
PA7 I/O 2
PA6 I/O 3
PA5 I/O 4
PA4 I/O 5
PA3 I/O 6
PA2 I/O 7
PA1 I/O 8
PA0 I/O 9
PB7 I/O 10
PB6 I/O 11
PB5 I/O 12
PB4 I/O 13
PB3 I/O 14
PB2 I/O 15
PB1 I/O 16
PB0 I/O 17
PC7/Tx I/O 18
PC6/Rx I/O 19
51 PG6 I/O
50 PG7 I/O
49 PF7 OUT
48 PF6 OUT
47 PF5 OUT
46 PF4 OUT
45 PF3 OUT
44 PF2 OUT
43 PF1 OUT
42 PF0 OUT
41 PE7 OUT
40 PE6 OUT
39 PE5 OUT
38 PE4 OUT
37 PE3 OUT
36 PE2 OUT
35 PE1 OUT
34 PE0 OUT
33 PD7 IN
Vcc (+5V)
20 PC5/CK I/O
21 PC4 I/O
22 PC3 I/O
23 PC2 I/O
24 PC1 I/O
25 PC0 I/O
26
27 PD1 IN
28 PD2 IN
29 PD3 IN
30 PD4 IN
31 PD5 IN
32 PD6/INT2 IN



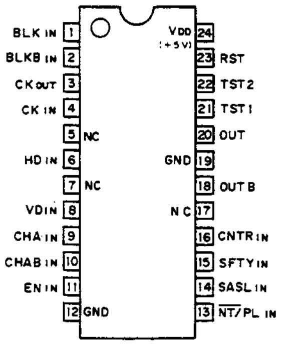
27 PD1
28 PD2
29 PD3
30 PD4
31 PD5
32 PD6/INT2
33 PD7
59 RESET
61 STBY
60 INT
1 TIMER
62 XTAL
63 EXTAL
25 PC0
24 PC1
23 PC2
22 PC3
21 PC4
20 PC5/CK
19 PC6/RX
18 PC7/TX
57 PG0
56 PG1
55 PG2
54 PG3
53 PG4
52 PG5
51 PG6
50 PG7
PE0 34
PE1 35
PE2 36
PE3 37
PE4 38
PE5 39
PE6 40
PE7 41
PF0 42
PF1 43
PF2 44
PF3 45
PF4 46
PF5 47
PF6 48
PF7 49
PA0 9
PA1 8
PA2 7
PA3 6
PA4 5
PA5 4
PA6 3
PA7 2
PB0 17
PB1 16
PB2 15
PB3 14
PB4 13
PB5 12
PB6 11
PB7 10

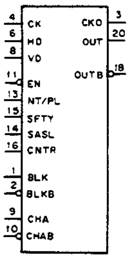
PA0~PA7 : 8-BIT I/O PORT A
PB0~PB7 : 8-BIT I/O PORT B
PC0~PC7 : 8-BIT I/O PORT C
PD1~PD7 : 7-BIT IN PORT D
PE0~PE7 : 8-BIT OUT PORT E
PF0~PF7 : 8-BIT OUT PORT F
PG0~PG7 : 8-BIT I/O PORT G
RESET : RESET IN
STBY : STANDBY IN
INT : INTERRUPT IN
INT2 : INTERRUPT IN
TIMER : TIMER CONTROL IN
XTAL : CRYSTAL
EXTAL : EXTERNAL CRYSTAL IN
CK : SERIAL INTERFACE CLOCK I/O
RX : SERIAL DATA RECEIVE
TX : SERIAL DATA TRANSMIT



2~9
PA0~PA7
PORT A
10~17
PB0~PB7
PORT B
21~25
PC0~PC4
PC5/CK 20
PC6/RX 19
PC7/TX 18
PORT C
SERIAL DATA REGISTER
SERIAL CONTROL REGISTER
SERIAL STATUS REGISTER
MISCELLANEOUS REGISTER
PD7
PD6/INT2
PD1~PD5
PORT D
256 BYTE RAM
7872 BYTE ROM
ACCUMULATOR A
INDEX REGISTER X
CONDITION CODE REGISTER CC
STACK POINTER SP
PROGRAM COUNTER "HIGH" PCH
PROGRAM COUNTER "LOW" PCL
CPU
ALU
CPU CONTROL
59 RESET
61 STBY
60 INT
OSC
62 XTAL
63 EXTAL
TIMER/COUNTER
PRESCALER
1 TIMER
TIMER CONTROL
PORT E
34~41
PE0~PE7
PORT F
42~49
PF0~PF7
PORT G
50~57
PG0~PG7

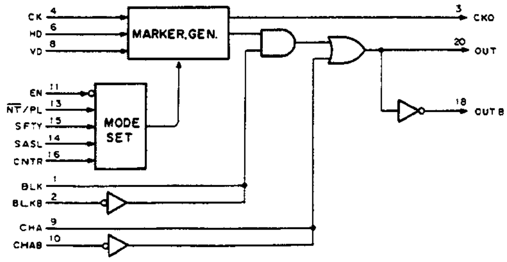
CXD8154BM (SONY)
C-MOS GATE ARRAY
- TOP VIEW -


BLK IN 1
BLKB IN 2
CK OUT 3
CK IN 4
5 NC
HD IN 6
7 NC
VD IN 8
CHA IN 9
CHAB IN 10
EN IN 11
12 GND
VDD (+5V) 24
23 RST
22 TST2
21 TST1
20 OUT
GND 19
18 OUT B
NC 17
16 CNTR IN
15 SFTY IN
14 SASL IN
13 NT/PL IN

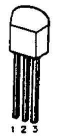

4 CK
6 HD
8 VD
11 EN
13 NT/PL
15 SFTY
14 SASL
16 CNTR
1 BLK
2 BLKB
9 CHA
10 CHAB
CKO 3
OUT 20
OUTB 18

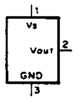
INPUT
BLK : BLKG IN
BLKB : $\overline{\text{BLKG}}$ IN
CHA : CHR IN
CHAB : $\overline{\text{CHR}}$ IN
CK : CLOCK IN
CNTR : CENTER $\overline{\text{ON}}$/OFF
EN : ENABLE IN
HD : HORIZONTAL DRIVE IN
$\overline{\text{NT}}$/PL : $\overline{\text{NTSC}}$/PAL
RST : RESET
SASL : SAFETY $\overline{\text{80}}$/90
SFTY : SAFETY $\overline{\text{ON}}$/OFF
VD : VERTICAL DRIVE IN
TST1 : TEST 1
TST2 : TEST 2

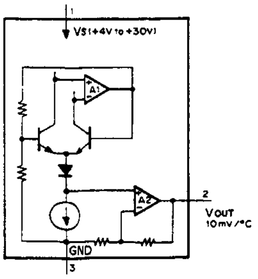
OUTPUT
OUT : OUTPUT
OUTB : $\overline{\text{OUTPUT}}$
CKO : CLOCK OUT


CK 4
HD 6
VD 8
MARKER.GEN.
EN 11
NT/PL 13
SFTY 15
SASL 14
CNTR 16
MODE SET
BLK 1
BLKB 2
CHA 9
CHAB 10
3 CKO
20 OUT
18 OUTB

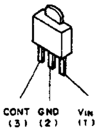
LM35DZ (NS)
BIPOLAR TEMPERATURE SENSOR

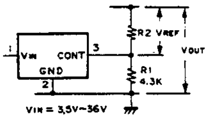



1
Vs
Vout 2
GND
3


1
Vs(+4V to +30V)
A1
A2
2
VOUT
10mV/°C
GND
3

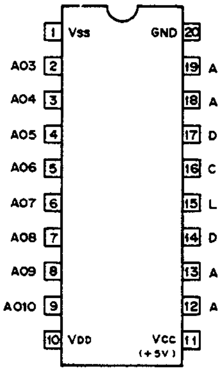
M5237ML (MITSUBISHI)
ADJUSTABLE VOLTAGE REGULATOR

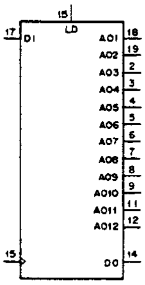

CONT (3)
GND (2)
VIN (1)


1
VIN
CONT
3
GND
2
R2
VREF
VOUT
R1
4.3K

V_{IN} = 3.5V~36V
V_{OUT} = 1.5V~33V
$V_{OUT} = V_{REF}(1+\frac{R2}{R1}) \fallingdotseq 1.26 \times (1+\frac{R2}{4.3})(V)$
($R1$ = 4.3KΩ, $V_{REF} \fallingdotseq$ 1.26V)

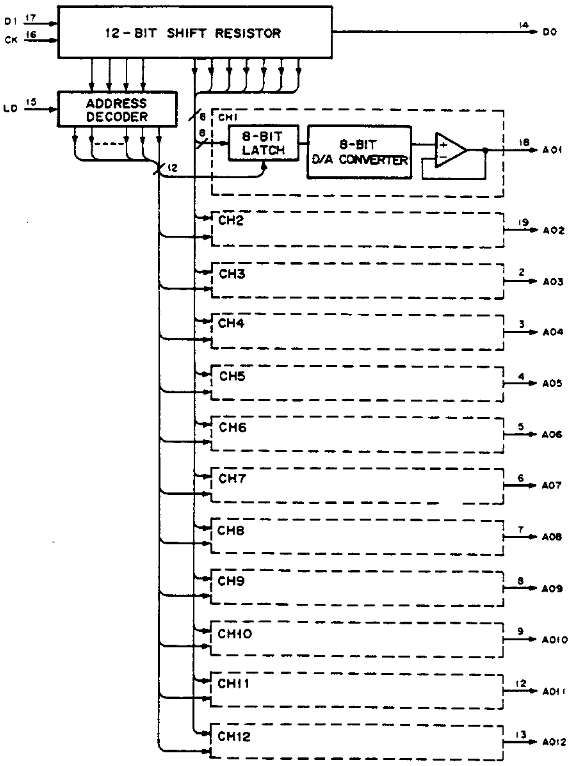
M62352GP (MITSUBISHI) FLAT PACKAGE
C-MOS 8-BITx12 CHANNEL D/A CONVERTER
(WITH BUFFER OPERATIONAL AMPLIFIER)
- TOP VIEW -


1 Vss
AO3 2
AO4 3
AO5 4
AO6 5
AO7 6
AO8 7
AO9 8
AO10 9
10 VDD
GND 20
19 AO2
18 AO1
17 DI
16 CK
15 LD
14 DO
13 AO12
12 AO11
Vcc (+5V) 11

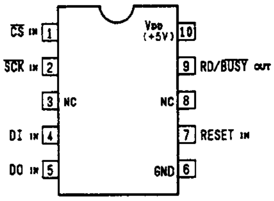

15 LD
17 DI
15
AO1 18
AO2 19
AO3 2
AO4 3
AO5 4
AO6 5
AO7 6
AO8 7
AO9 8
AO10 9
AO11 11
AO12 12
DO 14

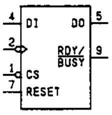
AO1 - AO12 : 8-BIT D/A OUTPUT
CK : CLOCK INPUT
DI : SERIAL DATA INPUT
DO : DATA OUTPUT

NOTE :
3.5V < VDD < Vcc
- 3.5V < Vss < Vcc

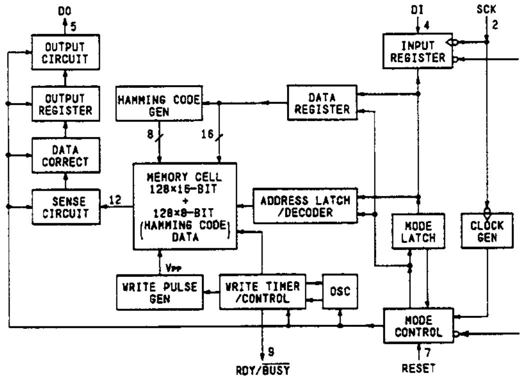

DI 17
CK 16
12-BIT SHIFT RESISTOR
14 DO
LD 15
ADDRESS DECODER
8
CH1
8-BIT LATCH
8-BIT D/A CONVERTER
12
18 AO1
CH2
19 AO2
CH3
2 AO3
CH4
3 AO4
CH5
4 AO5
CH6
5 AO6
CH7
6 AO7
CH8
7 AO8
CH9
8 AO9
CH10
9 AO10
CH11
12 AO11
CH12
13 AO12

M6M80021FP (MITSUBISHI) FLAT PACKAGE
C-MOS 2k (128x16) BIT ERASABLE PROM
– TOP VIEW –

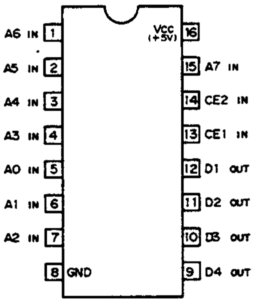

CS IN 1
SCK IN 2
3 NC
DI IN 4
DO IN 5
VDD (+5V) 10
9 RD/BUSY OUT
NC 8
7 RESET IN
GND 6

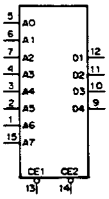

4 DI
DO 5
2
RDY/BUSY 9
1 CS
7 RESET

CS :CHIP SELECT INPUT
DI :DATA INPUT
DO :DATA OUTPUT
RDY/$\overline{\text{BUSY}}$:BUSY OUTPUT
RESET :RESET INPUT
SCK :CLOCK INPUT

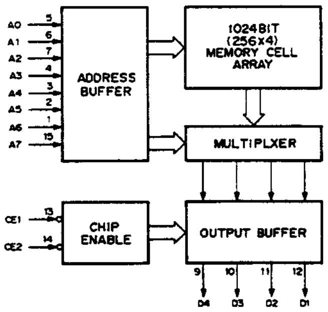

DO
5
OUTPUT CIRCUIT
OUTPUT REGISTER
DATA CORRECT
SENSE CIRCUIT
12
HAMMING CODE GEN
8
16
MEMORY CELL 128×16-BIT + 128×8-BIT (HAMMING CODE) DATA
DATA REGISTER
ADDRESS LATCH /DECODER
DI
4
SCK
2
INPUT REGISTER
MODE LATCH
CLOCK GEN
VPP
WRITE PULSE GEN
WRITE TIMER /CONTROL
OSC
MODE CONTROL
9
RDY/BUSY
7
RESET

MB7114LPF (FUJITSU) (ACCESS TIME = 50nS) FLAT PACKAGE
TTL 1024-BIT (256x4) PROM
– TOP VIEW –

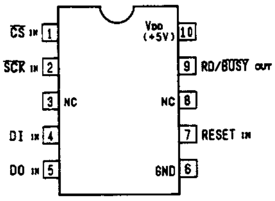

A6 IN 1
A5 IN 2
A4 IN 3
A3 IN 4
A0 IN 5
A1 IN 6
A2 IN 7
8 GND
VCC (+5V) 16
15 A7 IN
14 CE2 IN
13 CE1 IN
12 D1 OUT
11 D2 OUT
10 D3 OUT
9 D4 OUT

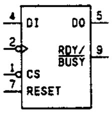

5 A0
6 A1
7 A2
4 A3
3 A4
2 A5
1 A6
15 A7
D1 12
D2 11
D3 10
D4 9
CE1 13
CE2 14

A0–A7 ;ADDRESS INPUTS
D1–D4 ;DATA OUTPUTS
CE1,CE2 ;CHIP ENABLE INPUTS

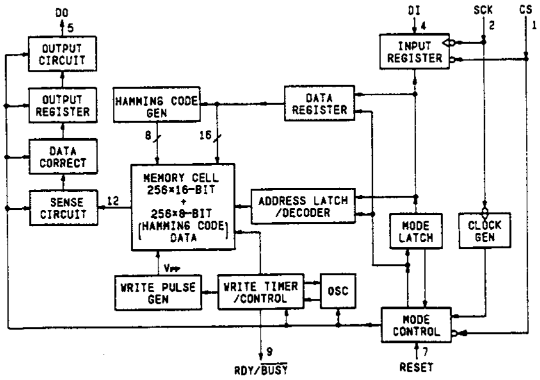

A0 5
A1 6
A2 7
A3 4
A4 3
A5 2
A6 1
A7 15
ADDRESS BUFFER
1024BIT (256x4) MEMORY CELL ARRAY
MULTIPLXER
CE1 13
CE2 14
CHIP ENABLE
OUTPUT BUFFER
9 10 11 12
D4 D3 D2 D1

M6M80041FP (MITSUBISHI) FLAT PACKAGE
C-MOS 4k (256x16) BIT ERASABLE PROM
– TOP VIEW –

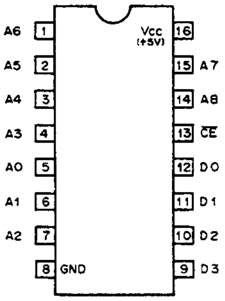

CS IN 1
SCK IN 2
3 NC
DI IN 4
DO IN 5
VDD (+5V) 10
9 RD/BUSY OUT
NC 8
7 RESET IN
GND 6

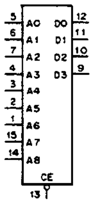

4 DI
DO 5
2
RDY/BUSY 9
1 CS
7 RESET

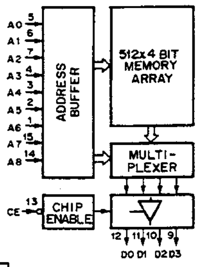
CS :CHIP SELECT INPUT
DI :DATA INPUT
DO :DATA OUTPUT
RDY/$\overline{\text{BUSY}}$:BUSY OUTPUT
RESET :RESET INPUT
SCK :CLOCK INPUT


DO
5
OUTPUT CIRCUIT
OUTPUT REGISTER
DATA CORRECT
SENSE CIRCUIT
12
HAMMING CODE GEN
8
16
MEMORY CELL 256×16-BIT + 256×8-BIT (HAMMING CODE) DATA
DATA REGISTER
ADDRESS LATCH /DECODER
DI
4
SCK
2
CS
1
INPUT REGISTER
MODE LATCH
CLOCK GEN
VPP
WRITE PULSE GEN
WRITE TIMER /CONTROL
OSC
MODE CONTROL
9
RDY/BUSY
7
RESET

MB7116H (FUJITSU)
2K (512x4)-BIT PROM WITH 3-STATE OUTPUTS
– TOP VIEW –


A6 1
A5 2
A4 3
A3 4
A0 5
A1 6
A2 7
8 GND
VCC (+5V) 16
15 A7
14 A8
13 CE
12 D0
11 D1
10 D2
9 D3


5 A0
6 A1
7 A2
4 A3
3 A4
2 A5
1 A6
15 A7
14 A8
D0 12
D1 11
D2 10
D3 9
CE 13


A0 5
A1 6
A2 7
A3 4
A4 3
A5 2
A6 1
A7 15
A8 14
ADDRESS BUFFER
512x4 BIT MEMORY ARRAY
MULTI-PLEXER
CE 13
CHIP ENABLE
12 11 10 9
D0 D1 D2 D3

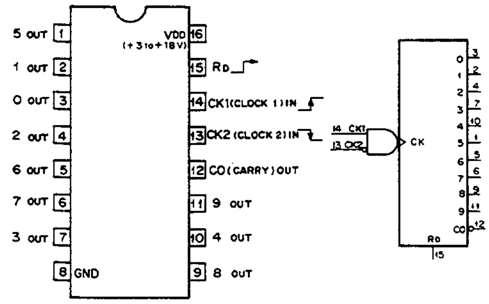
CE	OUTPUT
0	ENABLE
1	HI-Z

A0-A8; ADDRESS INPUTS
D0-D3; DATA OUTPUTS
CE ; CHIP ENABLE INPUT

0 ; LOW LEVEL
1 ; HIGH LEVEL
HI-Z ; HIGH IMPEDANCE

MC14017BF (MOTOROLA) FLAT PACKAGE

C-MOS DECADE COUNTER/DIVIDER
- TOP VIEW -

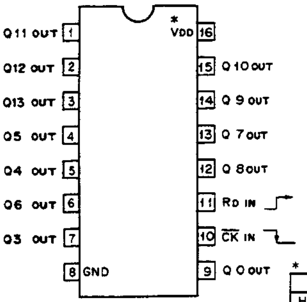

5 OUT 1
1 OUT 2
0 OUT 3
2 OUT 4
6 OUT 5
7 OUT 6
3 OUT 7
8 GND
VDD (+3 to +18V) 16
15 RD
14 CK1 (CLOCK 1) IN
13 CK2 (CLOCK 2) IN
12 CO (CARRY) OUT
11 9 OUT
10 4 OUT
9 8 OUT
14 CK1
13 CK2
CK
0 3
1 2
2 4
3 7
4 10
5 1
6 5
7 6
8 9
9 11
CO 12
RD
15

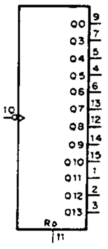
COUNT	INPUTS		OUTPUTS										
	RD	CK=CK1·$\overline{CK2}$	9	8	7	6	5	4	3	2	1	0	CO
0	1	X	0	0	0	0	0	0	0	0	0	1	1
0	0	_⌠‾	0	0	0	0	0	0	0	0	0	1	1
1	0	_⌠‾	0	0	0	0	0	0	0	0	1	0	1
2	0	_⌠‾	0	0	0	0	0	0	0	1	0	0	1
3	0	_⌠‾	0	0	0	0	0	0	1	0	0	0	1
4	0	_⌠‾	0	0	0	0	0	1	0	0	0	0	1
5	0	_⌠‾	0	0	0	0	1	0	0	0	0	0	0
6	0	_⌠‾	0	0	0	1	0	0	0	0	0	0	0
7	0	_⌠‾	0	0	1	0	0	0	0	0	0	0	0
8	0	_⌠‾	0	1	0	0	0	0	0	0	0	0	0
9	0	_⌠‾	1	0	0	0	0	0	0	0	0	0	0
NO COUNT	0	1	NO CHANGE										
	0	0											

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

MC14020BF (MOTOROLA) FLAT PACKAGE

C-MOS 14-STAG RIPPLE-CARRY BINARY COUNTER/DRIVER
- TOP VIEW -


Q11 OUT 1
Q12 OUT 2
Q13 OUT 3
Q5 OUT 4
Q4 OUT 5
Q6 OUT 6
Q3 OUT 7
8 GND
* VDD 16
15 Q 10 OUT
14 Q 9 OUT
13 Q 7 OUT
12 Q 8 OUT
11 RD IN
10 $\overline{CK}$ IN
9 Q 0 OUT


Q0 9
Q3 7
Q4 5
Q5 4
Q6 6
Q7 13
Q8 12
Q9 14
Q10 15
Q11 1
Q12 2
Q13 3
10
RD
11

*

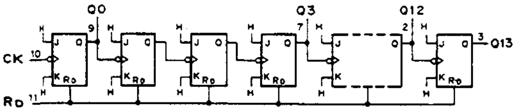
TYPE	VDD
HC4020	+2 to +6V
14020, 4020, 84020	+3 to +18V

COUNT		BINARY OUTPUTS											
		Q13	Q12	Q11	Q10	Q9	Q8	Q7	Q6	Q5	Q4	Q3	Q0
0	0000	0	0	0	0	0	0	0	0	0	0	0	0
1	0001	0	0	0	0	0	0	0	0	0	0	0	1
2	0002	0	0	0	0	0	0	0	0	0	0	0	0
3	0003	0	0	0	0	0	0	0	0	0	0	0	1
4	0004	0	0	0	0	0	0	0	0	0	0	0	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
16380	4FFC	1	1	1	1	1	1	1	1	1	1	1	0
16381	4FFD	1	1	1	1	1	1	1	1	1	1	1	1
16382	4FFE	1	1	1	1	1	1	1	1	1	1	1	0
16383	4FFF	1	1	1	1	1	1	1	1	1	1	1	1

IN HEXADECIMAL
IN DECIMAL

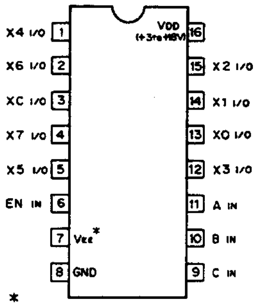
RD	Q13-Q0
1	ALL LOW
0	COUNT

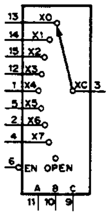
0; LOW LEVEL
1; HIGH LEVEL


Q0
Q3
Q12
9
7
2
3
Q13
H
J
Q
K
RD
CK 10
RD 11

MC14051BF (MOTOROLA) FLAT PACKAGE

C-MOS 8-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -


X4 I/O 1
X6 I/O 2
XC I/O 3
X7 I/O 4
X5 I/O 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 X2 I/O
14 X1 I/O
13 X0 I/O
12 X3 I/O
11 A IN
10 B IN
9 C IN


13 X0
14 X1
15 X2
12 X3
1 X4
5 X5
2 X6
4 X7
XC 3
6 EN OPEN
A B C
11 10 9

CONTROL INPUTS				SELECTED CHANNEL
EN	SELECT			
	C	B	A	
0	0	0	0	X0
0	0	0	1	X1
0	0	1	0	X2
0	0	1	1	X3
0	1	0	0	X4
0	1	0	1	X5
0	1	1	0	X6
0	1	1	1	X7
1	X	X	X	OPEN

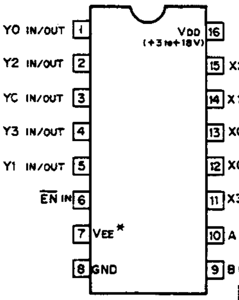
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

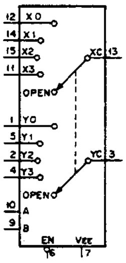
X0 to X7; ANALOG INPUTS/OUTPUTS
XC; COMMON INPUT/OUTPUT
A, B, C; CHANNEL SELECT INPUT
EN; ENABLE INPUT

*
VEE ; VDD − VEE = +3 to +18V

MC14052BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -


Y0 IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
$\overline{EN}$ IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 X0 IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN


12 X0
14 X1
15 X2
11 X3
XC 13
OPEN
1 Y0
5 Y1
2 Y2
4 Y3
YC 3
OPEN
10 A
9 B
EN
VEE
6
7

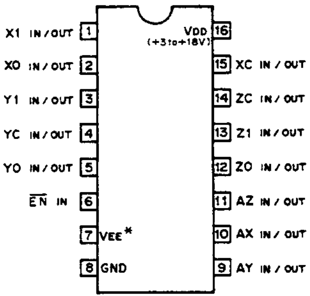
VEE* ; VDD − VEE = +3 to +18V

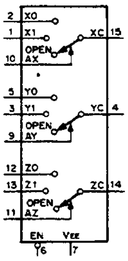
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

MC14053BF (MOTOROLA) FLAT PACKAGE
TC4053BFS (TOSHIBA) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
$\overline{EN}$ IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT

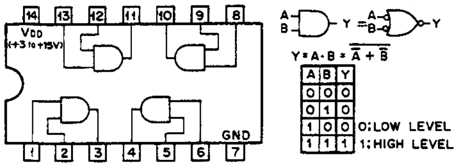

2 X0
1 X1
XC 15
OPEN
10 AX
5 Y0
3 Y1
YC 4
OPEN
9 AY
12 Z0
13 Z1
ZC 14
OPEN
11 AZ
EN
VEE
6
7

VEE* ; VDD − VEE = +3 to +18 V

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

CONT. INPUTS		ON CHANNEL
EN	A (X, Y, Z,)	
0	0	0
0	1	1
1	X	OPEN

MC14081BF (MOTOROLA) FLAT PACKAGE
C-MOS 2-INPUT AND GATE
– TOP VIEW –

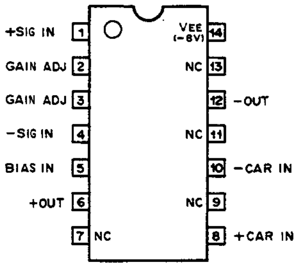

14
13
12
11
10
9
8
VDD
(+3 to +15V)
GND
1
2
3
4
5
6
7
A
B
Y
A
B
Y

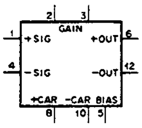
Y = A·B = $\overline{A} + \overline{B}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

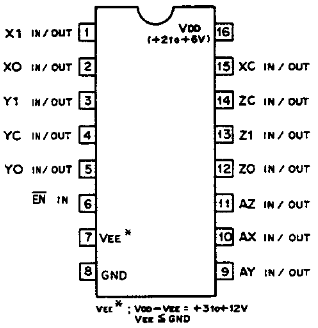
0: LOW LEVEL
1: HIGH LEVEL

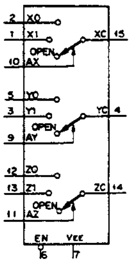
MC1496MR (MOTOROLA) FLAT PACKAGE
BALANCED MODULATOR/DEMODULATOR
– TOP VIEW –


+SIG IN 1
GAIN ADJ 2
GAIN ADJ 3
−SIG IN 4
BIAS IN 5
+OUT 6
7 NC
VEE (−8V) 14
NC 13
12 −OUT
NC 11
10 −CAR IN
NC 9
8 +CAR IN


2
3
GAIN
1
+SIG
+OUT
6
4
−SIG
−OUT
12
+CAR
−CAR
BIAS
8
10
5

MC74HC4053F (MOTOROLA) FLAT PACKAGE
TC74HC4053AF (TOSHIBA) FLAT PACKAGE
TC74HC4053AFS (TOSHIBA) FLAT PACKAGE
C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
– TOP VIEW –

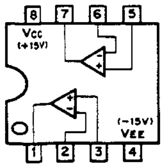

X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+2 to +6V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT
VEE* ; VDD−VEE = +3 to +12V
VEE ≤ GND


2 X0
1 X1
XC 15
OPEN
10 AX
5 Y0
3 Y1
YC 4
OPEN
9 AY
12 Z0
13 Z1
ZC 14
OPEN
11 AZ
EN
VEE
6
7

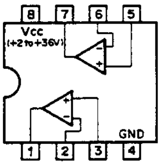
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z)	
0	0	0
0	1	1
1	X	OPEN

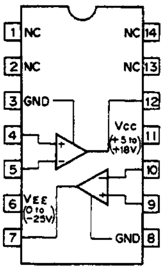
NJM2043M-D (JRC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIER
– TOP VIEW –


8
7
6
5
Vcc (+15V)
(−15V) VEE
1
2
3
4

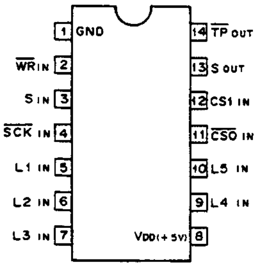
NJM2903M (JRC) FLAT PACKAGE
DUAL VOLTAGE COMPARATORS
– TOP VIEW –

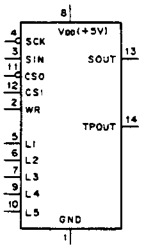

8
7
6
5
Vcc (+2 to +36V)
GND
1
2
3
4

NJM319M (JRC) FLAT PACKAGE
DUAL VOLTAGE COMPARATOR
– TOP VIEW –


1 NC
2 NC
3 GND
4
5
6 VEE (0 to −25V)
7
NC 14
NC 13
12
Vcc (+5 to +18V) 11
10
9
GND 8

RTC4553B (EPSON)
C-MOS REAL TIME CLOCK


1 GND
WR IN 2
S IN 3
SCK IN 4
L1 IN 5
L2 IN 6
L3 IN 7
14 TP OUT
13 S OUT
12 CS1 IN
11 CSO IN
10 L5 IN
9 L4 IN
VDD (+5V) 8

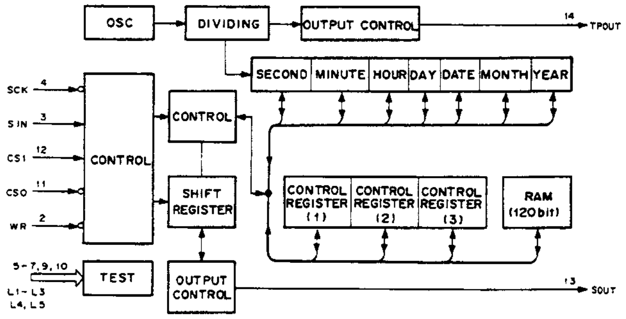

8
VDD (+5V)
4 SCK
3 SIN
11 CSO
12 CS1
2 WR
SOUT 13
TPOUT 14
5 L1
6 L2
7 L3
9 L4
10 L5
GND
1

INPUT

$\overline{\mathrm{CS0}}$	; CHIP SELECT (L : ACCESS ENABLE, H : SOUT HIGH Z)
CS1	; POWER DOWN DETECTION
L1 – L5	; TEST IN
$\overline{\mathrm{SCK}}$	; SERIAL SYNC SIGNAL
SIN	; SERIAL ADDRESS/DATA
$\overline{\mathrm{WR}}$	; WRITING SELECT (L : WRITING, H : READING)

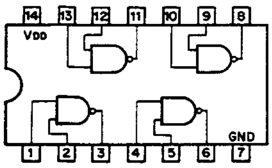
OUTPUT

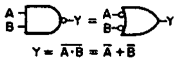
SOUT	; SERIAL ADDRESS/DATA
TPOUT	; REFERENCE SIGNAL


OSC
DIVIDING
OUTPUT CONTROL
14
TPOUT
SECOND
MINUTE
HOUR
DAY
DATE
MONTH
YEAR
SCK 4
SIN 3
CS1 12
CSO 11
WR 2
CONTROL
CONTROL
SHIFT REGISTER
CONTROL REGISTER (1)
CONTROL REGISTER (2)
CONTROL REGISTER (3)
RAM (120bit)
5-7, 9, 10
L1-L3
L4, L5
TEST
OUTPUT CONTROL
13
SOUT

SN74HC00ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATES
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

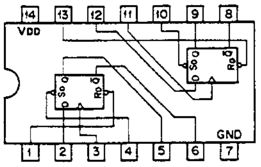
0; LOW LEVEL
1; HIGH LEVEL

NOTE :

TYPE	VDD
TC74AC00 TYPE	+2 to +5.5V
MC74HCT00N	+5V
74ACT00 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

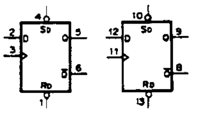
SN74HC74ANS (TI) FLAT PACKAGE

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
SD
RD
SD
RD
1
2
3
4
5
6
7

INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

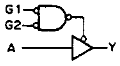

4
2
3
SD
RD
5
6
1
10
12
11
SD
RD
9
8
13

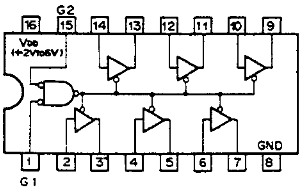
NOTE :

TYPE	VDD
TC74HCT74AF	+5V
TC74AC74 TYPE	+2 to +5.5V
74ACT74 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC365ANS (TI) FLAT PACKAGE

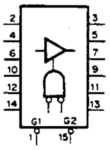
C-MOS 3-STATE BUS DRIVER
- TOP VIEW -




G2
16
15
14
13
12
11
10
9
VDD (+2Vto6V)
GND
1
2
3
4
5
6
7
8
G1

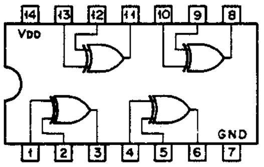
G1	G2	A	Y
0	0	0	0
0	0	1	1
0	1	X	HI-Z
1	0	X	HI-Z
1	1	X	HI-Z

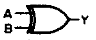
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE


2
4
6
10
12
14
3
5
7
9
11
13
G1
G2
1
15

SN74HC86ANS (TI) FLAT PACKAGE

C-MOS QUAD EXCLUSIVE OR GATES
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A} \cdot B + A \cdot \overline{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

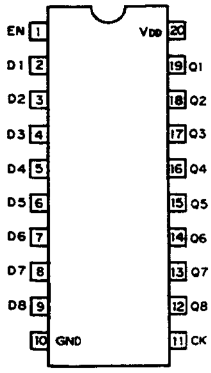
0; LOW LEVEL
1; HIGH LEVEL

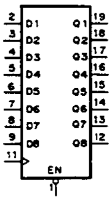
NOTE :

TYPE	VDD
TC74AC86 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC574ANS (TI) FLAT PACKAGE

C-MOS 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP
- TOP VIEW -

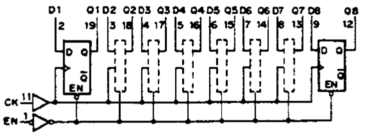

EN 1
D1 2
D2 3
D3 4
D4 5
D5 6
D6 7
D7 8
D8 9
10 GND
VDD 20
19 Q1
18 Q2
17 Q3
16 Q4
15 Q5
14 Q6
13 Q7
12 Q8
11 CK


2 D1
3 D2
4 D3
5 D4
6 D5
7 D6
8 D7
9 D8
11
Q1 19
Q2 18
Q3 17
Q4 16
Q5 15
Q6 14
Q7 13
Q8 12
EN
1

EACH FLIP-FLOP

INPUTS			OUT
EN	CK	D	Q
0	↑	1	1
0	↑	0	0
0	↓	X	Q_0
1	X	X	HI-Z

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE
Q_0 : NO CHANGE

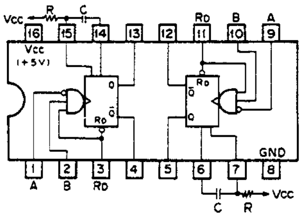

D1
Q1
D2
Q2
D3
Q3
D4
Q4
D5
Q5
D6
Q6
D7
Q7
D8
Q8
2
19
3
18
4
17
5
16
6
15
7
14
8
13
9
12
D
Q
EN
CK 11
EN 1

NOTE :

TYPE	VDD
74AC/74HC	+2 to +6V
74ACT/74HCT	+5V
TC74AC574F /74VHC	+2 to +5.5V

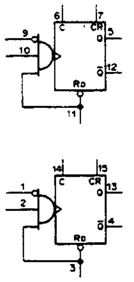
SN74LS123NS (TI) FLAT PACKAGE

TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR WITH DIRECT RESET
- TOP VIEW -

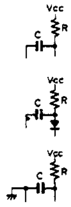

VCC
R
C
RD
B
A
16
15
14
13
12
11
10
9
Vcc (+5V)
RD
RD
GND
1
2
3
4
5
6
7
8
A
B
RD
C
R
Vcc

INPUTS			OUTPUTS	
RD	A	B	Q	$\overline{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE


6
7
C
CR
5
9
10
12
RD
11
14
15
C
CR
13
1
2
4
RD
3

OUTPUT PULSE WIDTH


Vcc
C
R
Vcc
C
R
Vcc
C
R

'123 ; $T_W = 0.28 \left(1 + \frac{700}{R}\right) CR$

'L123; $T_W = 0.33 \left(1 + \frac{700}{R}\right) CR$

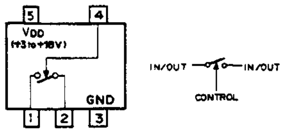
'123 ; $T_W = 0.25 \left(1 + \frac{700}{R}\right) CR$

'L123; $T_W = 0.29 \left(1 + \frac{700}{R}\right) CR$

'LS123; $T_W = 0.45CR$

TC4S66F (TOSHIBA)

C-MOS BILATERAL ANALOG SWITCH
– TOP VIEW –

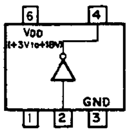

5
4
VDD
(+3 to +18V)
GND
1
2
3
IN/OUT
IN/OUT
CONTROL

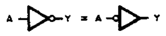
CONTROL	SWITCH
0	OFF
1	ON

0; LOW LEVEL
1; HIGH LEVEL

TC4S69F (TOSHIBA) FLAT PACKAGE
TC4SU69F (TOSHIBA) FLAT PACKAGE

C-MOS INVERTER BUFFER
– TOP VIEW –


6
4
VDD
(+3V to +18V)
GND
1
2
3



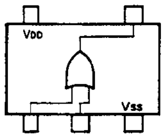
$Y = \overline{A}$

A	Y
0	1
1	0

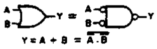
0; LOW LEVEL
1; HIGH LEVEL

TC4S71F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT OR GATE
– TOP VIEW –



(MINI MOLD PACKAGE)



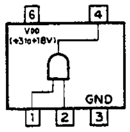
$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

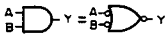
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

TC4S81F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT AND GATE
– TOP VIEW –


6
4
VDD
(+3 to +18V)
GND
1
2
3



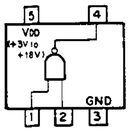
$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

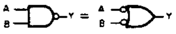
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0:LOW LEVEL
1:HIGH LEVEL

TC4SU11F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE
– TOP VIEW –


5
4
VDD
(+3V to +18V)
GND
1
2
3



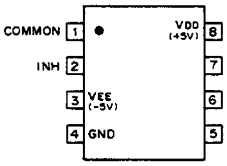
$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

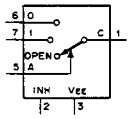
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

TC4W53F (TOSHIBA) FLAT PACKAGE

C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER
– TOP VIEW –


COMMON 1
INH 2
3 VEE (-5V)
4 GND
VDD (+5V) 8
7 CH1
6 CHO
5 A

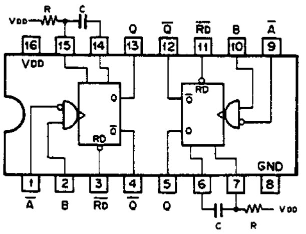

6 0
7 1
C 1
OPEN
5 A
INH
VEE
2
3

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE

CONT. INPUT		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	OPEN

TC74HC123AF (TOSHIBA) FLAT PACKAGE

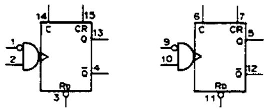
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS
– TOP VIEW –


VDD
R
C
Q
Q̄
R̄D
B
Ā
16
15
14
13
12
11
10
9
VDD
RD
RD
GND
1
2
3
4
5
6
7
8
Ā
B
R̄D
Q̄
Q
C
R
VDD

INPUT			OUTPUT	
RD	A	B	Q	Q̄
0	X	X	0	1
1	1	X	0	1
1	X	C	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH = 0.46CR

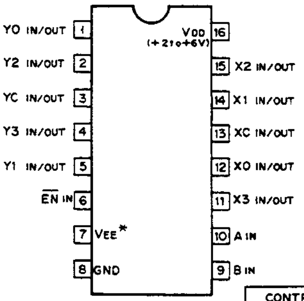

14
15
C
CR
13
Q
1
2
Q̄
4
RD
3
6
7
C
CR
5
Q
9
10
Q̄
12
RD
11

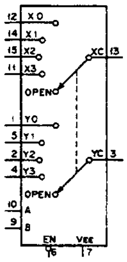
NOTE:

TYPE	VDD
TC74HCT123AF	+5V
OTHER TYPES	+2 to +6V

TC74HC4052AFS (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
– TOP VIEW –


YO IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+2 to +6V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 XO IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN


12 XO
14 X1
15 X2
11 X3
XC 13
OPEN
1 YO
5 Y1
2 Y2
4 Y3
YC 3
OPEN
10 A
9 B
EN
VEE
6
7

VEE*; VDD−VEE = +3 to +12 V

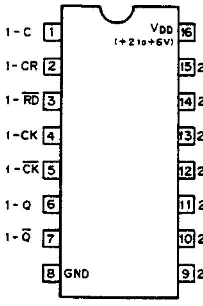
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

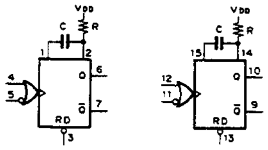
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

TC74HC4538AF (TOSHIBA) FLAT PACKAGE

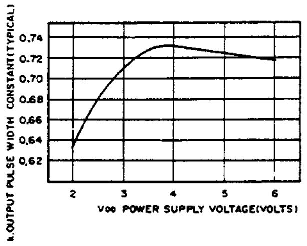
C-MOS DUAL RETRIGGERABLE / NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

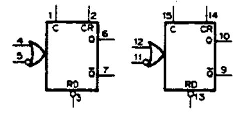
– TOP VIEW –


1-C 1
1-CR 2
1-$\overline{RD}$ 3
1-CK 4
1-$\overline{CK}$ 5
1-Q 6
1-$\overline{Q}$ 7
8 GND
VDD (+2 to +6V) 16
15 2-C
14 2-CR
13 2-$\overline{RD}$
12 2-CK
11 2-$\overline{CK}$
10 2-Q
9 2-$\overline{Q}$


VDD
C
R
1
2
4
5
Q
6
$\overline{Q}$
7
RD
3
15
14
12
11
10
9
13

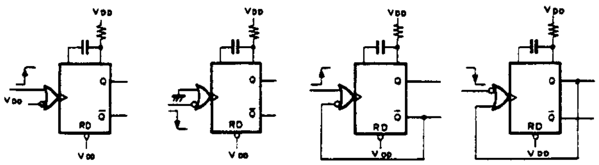
OUTPUT PULSE WIDTH = k·C·R




1
2
C
CR
4
5
Q
6
$\overline{Q}$
7
RD
3
15
14
12
11
10
9
13

RETRIGGERABLE M.M.V

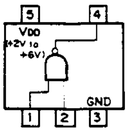
NON-RETRIGGERABLE M.M.V

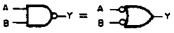

VDD
VDD
VDD
VDD
Q
$\overline{Q}$
RD
VDD
VDD
VDD
VDD

TC7S00F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE

– TOP VIEW –


5
4
VDD
(+2V to +6V)
GND
1
2
3



$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

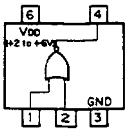
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

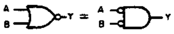
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7S02F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT NOR GATE

– TOP VIEW –


6
4
VDD
(+2 to +6V)
GND
1
2
3



$Y = \overline{A + B} = \overline{A} \cdot \overline{B}$

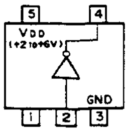
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

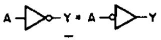
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7S04F (TOSHIBA) FLAT PACKAGE

C-MOS INVERTER

– TOP VIEW –


5
4
VDD
(+2 to +6V)
GND
1
2
3



$Y = \overline{A}$

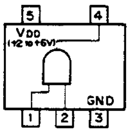
A	Y
0	1
1	0

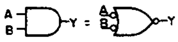
0; LOW LEVEL
1; HIGH LEVEL

TC7S08F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT AND GATE

– TOP VIEW –


5
4
VDD
(+2 to +6V)
GND
1
2
3



$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

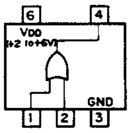
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

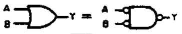
0; LOW LEVEL
1 ; HIGH LEVEL

TC7S32F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT OR GATE

– TOP VIEW –


6
4
VDD
(+2 to +6V)
GND
1
2
3



$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

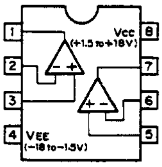
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

TL062CPS (TI) FLAT PACKAGE

OPERATIONAL AMPLIFIER
(JFET INPUT)

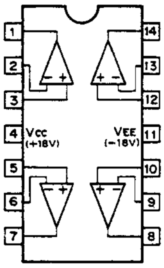
– TOP VIEW –


1
2
3
4
VEE
(−18 to −1.5V)
Vcc
(+1.5 to +18V)
8
7
6
5

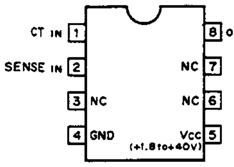
TL064CNS (TI) FLAT PACKAGE
TL064CPW (TI)

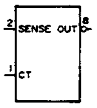
OPERATIONAL AMPLIFIER
(J FET-INPUT)

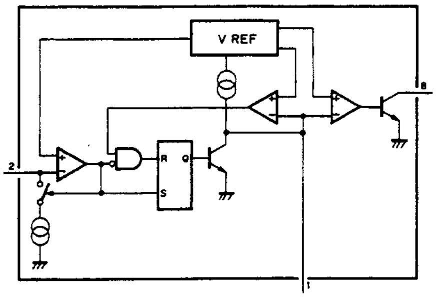
– TOP VIEW –


1
2
3
4
Vcc
(+18V)
5
6
7
14
13
12
11
VEE
(−18V)
10
9
8

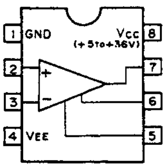
TL7700CPS (TI) FLAT PACKAGE
VARIABLE SUPPLY VOLTAGE SUPERVISOR
– TOP VIEW –


CT IN 1
SENSE IN 2
3 NC
4 GND
8 OUT
NC 7
NC 6
Vcc (+1.8 to +40V) 5

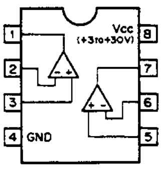

2 SENSE OUT 8
1 CT


V REF
R Q
S
2
8
1

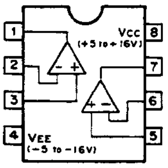
UPC311G2 (NEC) FLAT PACKAGE
VOLTAGE COMPARATOR
– TOP VIEW –


1 GND
2
3
4 VEE
Vcc (+5 to +36V) 8
7
6
5

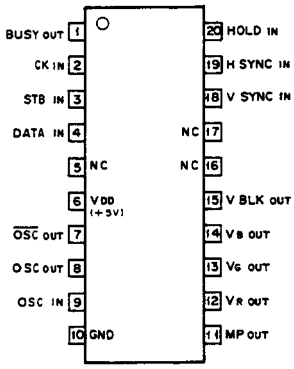
UPC358G2 (NEC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIERS
– TOP VIEW –

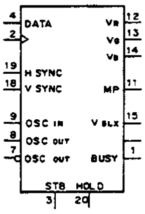

1
2
3
4 GND
Vcc (+3 to +30V) 8
7
6
5

UPC812G2 (NEC) FLAT PACKAGE
OPERATIONAL AMPLIFIER (JFET INPUT)
– TOP VIEW –


1
2
3
4 VEE (–5 to –16V)
Vcc (+5 to +16V) 8
7
6
5

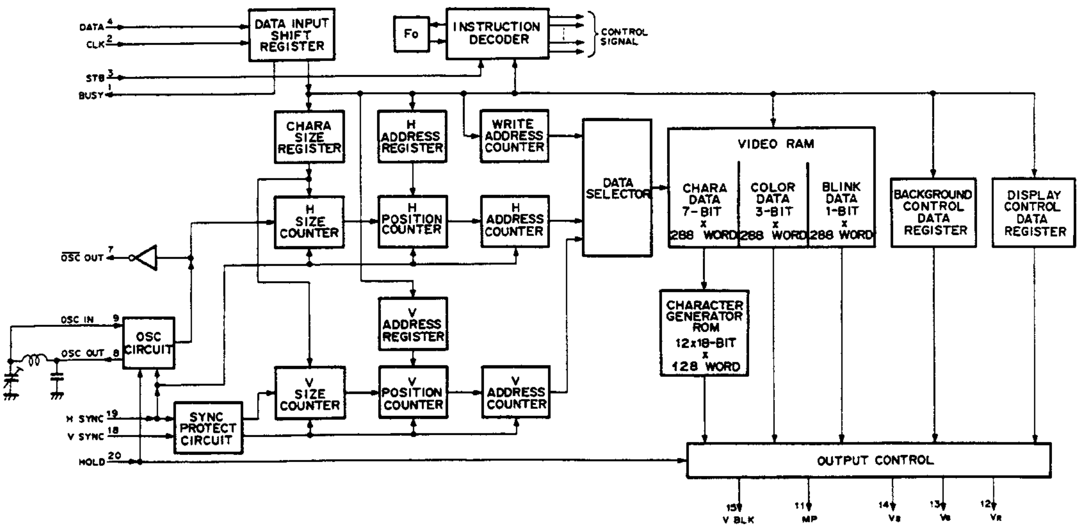
UPD6451AGT (NEC) FLAT PACKAGE
C-MOS CHARACTER DISPLAY CONTROLLER
– TOP VIEW –


BUSY OUT 1
CK IN 2
STB IN 3
DATA IN 4
5 NC
6 VDD (+5V)
OSC OUT 7
OSC OUT 8
OSC IN 9
10 GND
20 HOLD IN
19 H SYNC IN
18 V SYNC IN
NC 17
NC 16
15 V BLK OUT
14 VB OUT
13 VG OUT
12 VR OUT
11 MP OUT

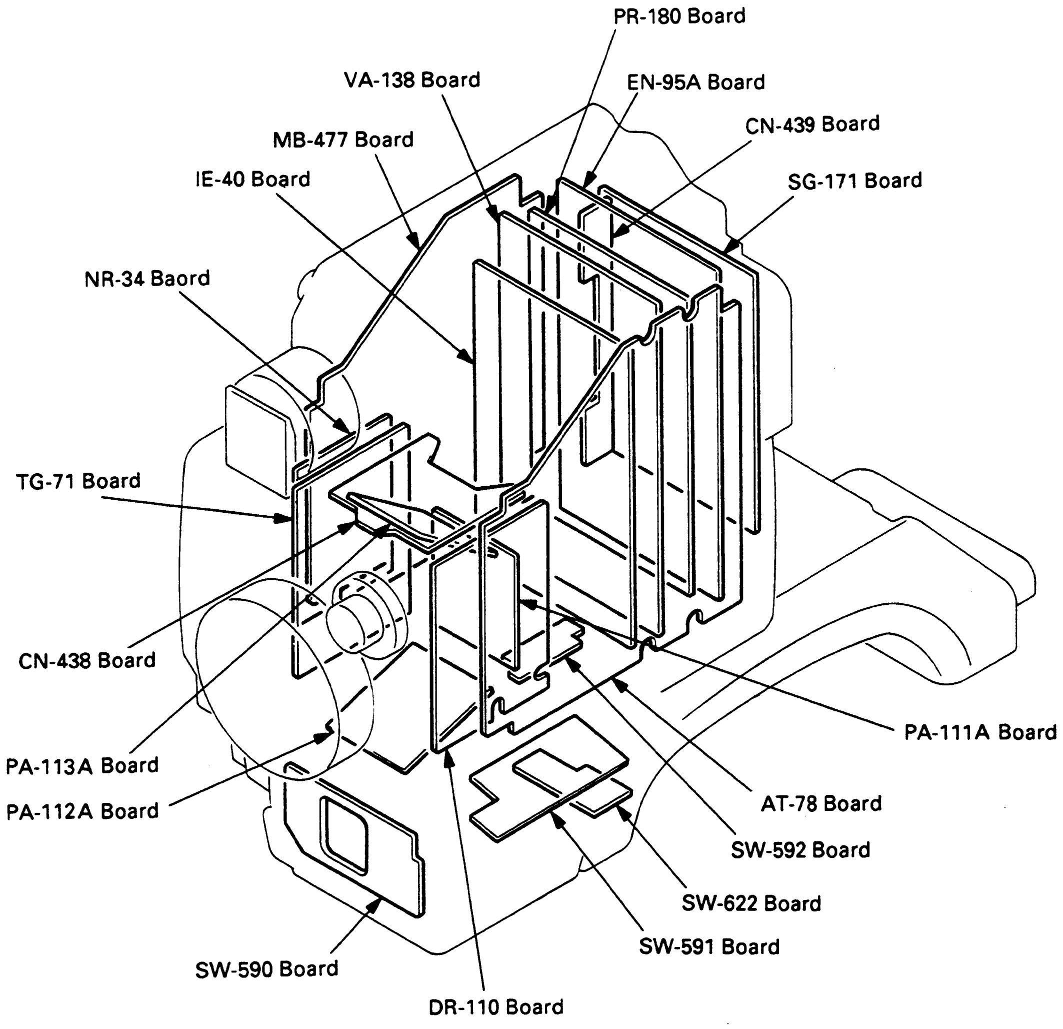

4 DATA
2
19 H SYNC
18 V SYNC
9 OSC IN
8 OSC OUT
7 OSC OUT
VR 12
VG 13
VB 14
MP 11
V BLK 15
BUSY 1
STB 3
HOLD 20

INPUT
CK : CLOCK
DATA : CONTROL DATA
HOLD : SYSTEM DISABLE
H SYNC : HORIZONTAL SYNC
OSC IN : OSCILLATOR
STB : STROBE
V SYNC : VERTICAL SYNC

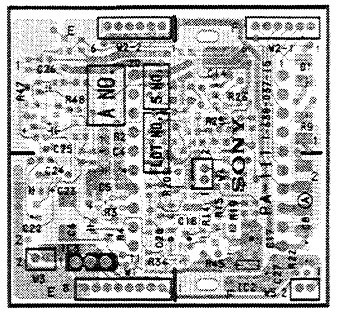
OUTPUT
BUSY : BUSY
MP : MASK PULSE
OSC OUT : OSCILLATOR
$\overline{\text{OSC}}$ OUT : OSCILLATOR
V BLK : VERTICAL BLANKING
V_B, V_G, V_R : B. G. R. CHARACTER DATA


DATA 4
CLK 2
STB 3
BUSY 1
DATA INPUT SHIFT REGISTER
Fo
INSTRUCTION DECODER
CONTROL SIGNAL
CHARA SIZE REGISTER
H ADDRESS REGISTER
WRITE ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CHARA DATA 7-BIT x 288 WORD
COLOR DATA 3-BIT x 288 WORD
BLINK DATA 1-BIT x 288 WORD
BACKGROUND CONTROL DATA REGISTER
DISPLAY CONTROL DATA REGISTER
H SIZE COUNTER
H POSITION COUNTER
H ADDRESS COUNTER
OSC OUT 7
OSC IN 9
OSC OUT 8
OSC CIRCUIT
V ADDRESS REGISTER
CHARACTER GENERATOR ROM 12x18-BIT x 128 WORD
V SIZE COUNTER
V POSITION COUNTER
V ADDRESS COUNTER
H SYNC 19
V SYNC 18
HOLD 20
SYNC PROTECT CIRCUIT
OUTPUT CONTROL
15 V BLK
11 MP
14 VB
13 VG
12 VR

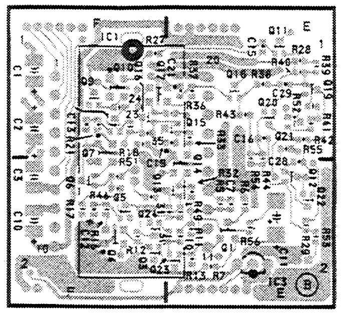
SECTION C
SCHEMATIC DIAGRAMS AND BOARD ILLUSTRATIONS


PR-180 Board
VA-138 Board
EN-95A Board
CN-439 Board
MB-477 Board
IE-40 Board
SG-171 Board
NR-34 Baord
TG-71 Board
CN-438 Board
PA-113A Board
PA-112A Board
PA-111A Board
AT-78 Board
SW-592 Board
SW-622 Board
SW-591 Board
SW-590 Board
DR-110 Board

PA-111A BOARD

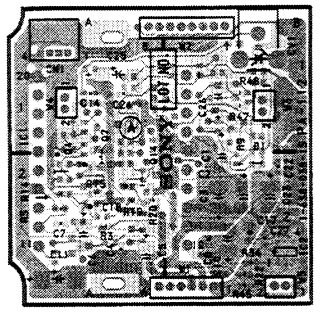

SONY
A NO.
LOT NO.
Ⓐ

1-638-037-15 COMPONENT SIDE

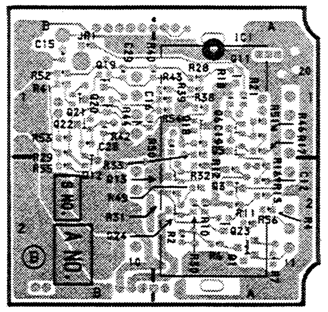


1-638-037-15 SOLDERING SIDE

PA-112A BOARD

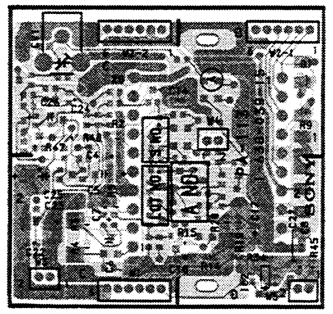


1-638-038-15 COMPONENT SIDE

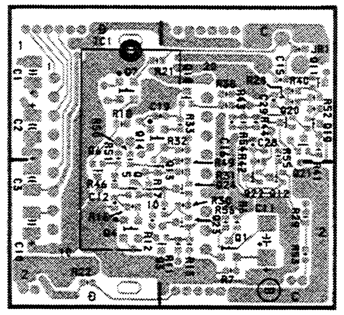


1-638-038-15 SOLDERING SIDE

PA-113A BOARD

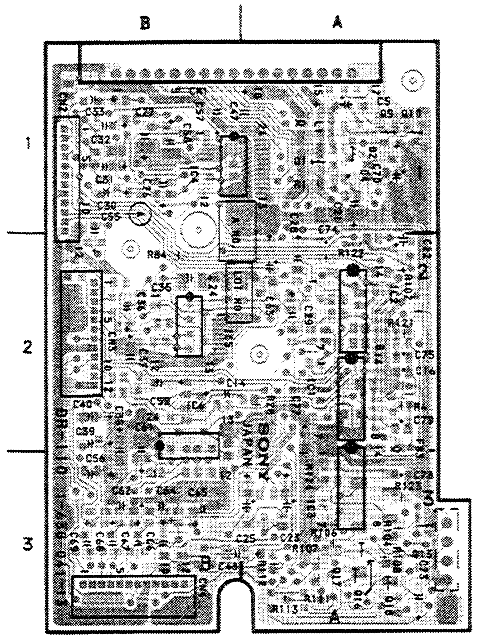

LOT NO.
A NO.
SONY

1-638-039-15 COMPONENT SIDE

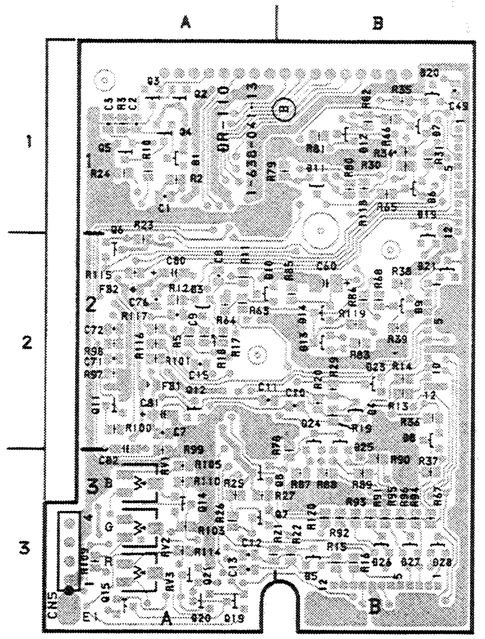


1-638-039-15 SOLDERING SIDE

DR-110 BOARD


B
A
1
2
3
SONY
JAPAN

1-638-041-13 COMPONENT SIDE


A
B
1
2
3
DR-110
1-638-041-13

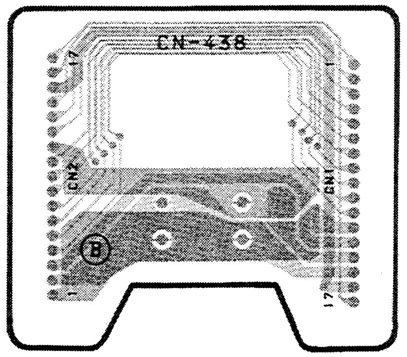
1-638-041-13 SOLDERING SIDE

DR-110(1-638-041-13)

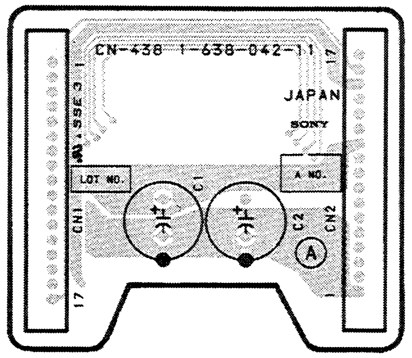
CN1	B-1	L1	A-1
CN2	B-1		
CN3	B-2	Q1	A-1
CN4	B-3	*Q2	A-1
*CN5	A-3	*Q3	A-1
		*Q4	A-1
*D1	A-1	*Q5	A-1
D2	A-1	*Q6	A-1
*D3	A-2	*Q7	B-3
*D4	B-2	*Q8	B-3
*D5	B-3	Q9	A-1
*D6	B-1	Q10	A-1
*D7	B-1	*Q11	A-2
*D8	B-2	*Q12	A-2
*D9	B-2	Q13	A-3
*D10	A-2	*Q14	A-3
*D11	B-1	*Q15	A-3
*D12	B-1	Q16	A-3
*D13	B-2	Q17	A-3
*D14	B-2	Q18	A-3
*D19	B-1	*Q19	A-3
*D20	B-1	*Q20	A-3
*D21	B-2	*Q21	A-3
*D23	B-2		
*D24	B-2	*RV1	A-3
*D25	B-2	*RV2	A-3
*D26	B-3	*RV3	A-3
*D27	B-3		
*D28	B-3		
*E1	A-3		
*FB1	A-2		
*FB2	A-2		
FB3	A-2		
IC1	A-2		
IC2	A-2		
IC3	A-3		
IC4	B-1		
IC5	B-2		
IC6	B-2		

*;SOLDERING SIDE

CN-438 BOARD


CN-438
CN2
CN1
17
1
Ⓑ

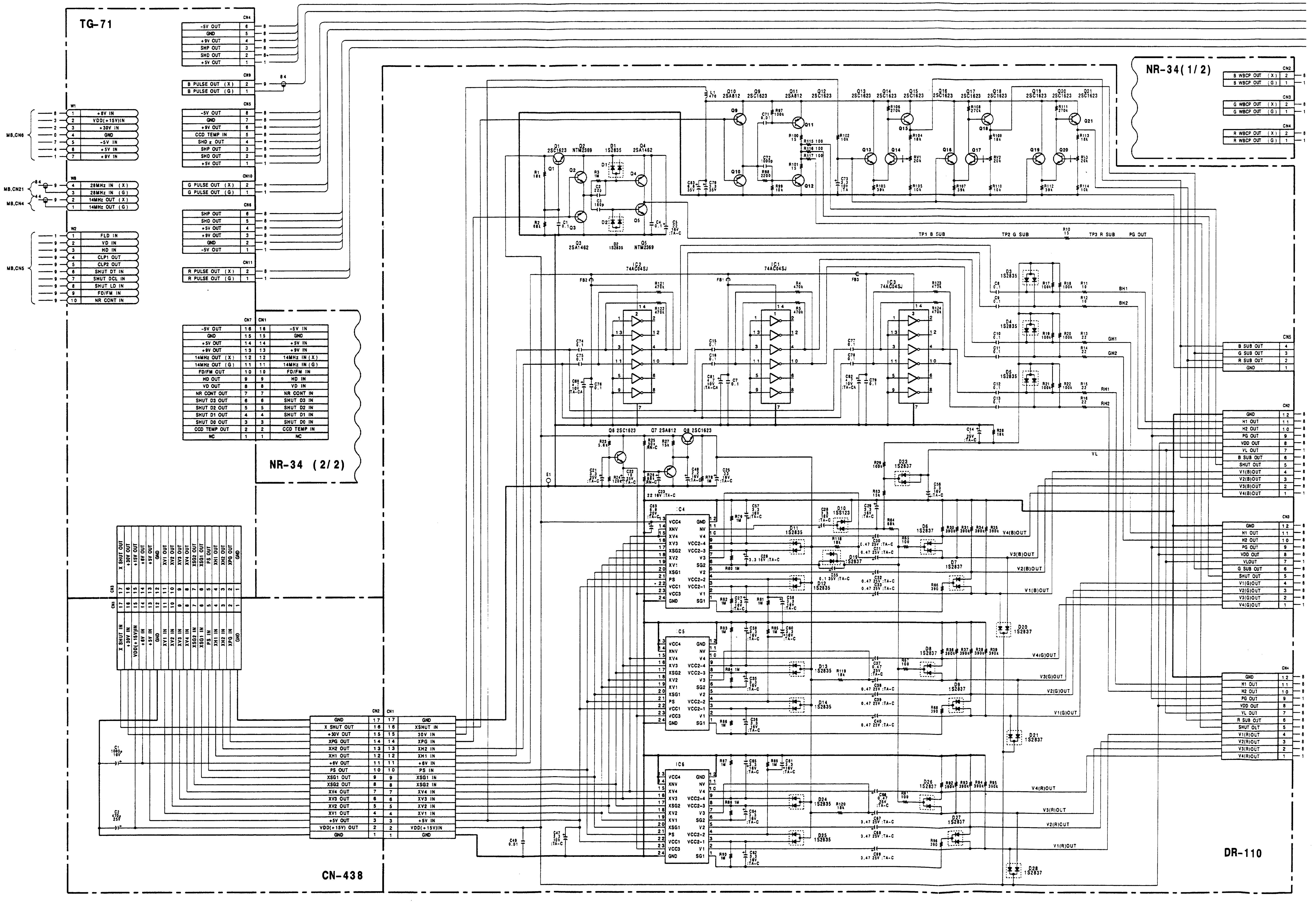
1-638-042-11 COMPONENT SIDE


CN-438 1-638-042-11
JAPAN
SONY
LOT NO.
A NO.
C1
C2
CN1
CN2
17
Ⓐ

1-638-042-11 SOLDERING SIDE

CCD BLOCK

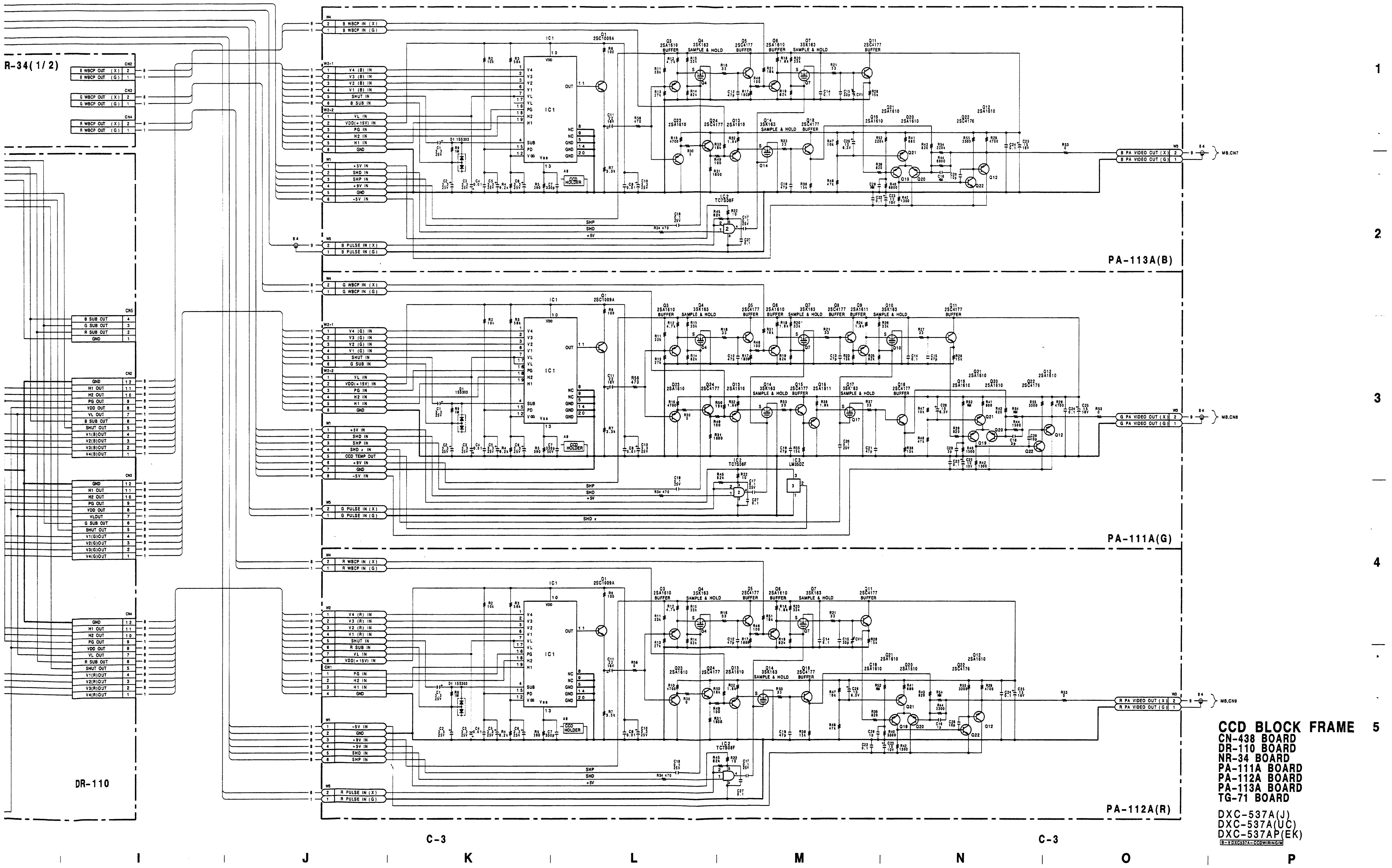
TG-71 BOARD
PA-111A BOARD
PA-112A BOARD
PA-113A BOARD
NR-34 BOARD
DR-110 BOARD
CN-438 BOARD


TG-71
NR-34(1/2)
NR-34 (2/2)
CN-438
DR-110
MB,CN6
MB,CN21
MB,CN4
MB,CN5
W1
W5
W2
CN4
CN5
CN9
CN10
CN6
CN11
CN7
CN1
CN2
CN3
-5V OUT
GND
+9V OUT
SHP OUT
SHD OUT
+5V OUT
B PULSE OUT (X)
B PULSE OUT (G)
CCD TEMP IN
G PULSE OUT (X)
G PULSE OUT (G)
R PULSE OUT (X)
R PULSE OUT (G)
+8V IN
VDD(+15V)IN
+30V IN
-5V IN
+5V IN
+9V IN
28MHz IN (X)
28MHz IN (G)
14MHz OUT (X)
14MHz OUT (G)
FLD IN
VD IN
HD IN
CLP1 OUT
CLP2 OUT
SHUT DT IN
SHUT DCL IN
SHUT LD IN
FD/FM IN
NR CONT IN
IC1 74AC04SJ
IC2 74AC04SJ
IC3 74AC04SJ
IC4
IC5
IC6
TP1 B SUB
TP2 G SUB
TP3 R SUB
PG OUT
B WBCP OUT (X)
B WBCP OUT (G)
G WBCP OUT (X)
G WBCP OUT (G)
R WBCP OUT (X)
R WBCP OUT (G)
B SUB OUT
G SUB OUT
R SUB OUT
H1 OUT
H2 OUT
VDD OUT
VL OUT
SHUT OUT
V1(B)OUT
V2(B)OUT
V3(B)OUT
V4(B)OUT
V1(G)OUT
V2(G)OUT
V3(G)OUT
V4(G)OUT
V1(R)OUT
V2(R)OUT
V3(R)OUT
V4(R)OUT
X SHUT OUT
XPG OUT
XH2 OUT
XH1 OUT
PS OUT
XSG1 OUT
XSG2 OUT
XV4 OUT
XV3 OUT
XV2 OUT
XV1 OUT
VDD(+15V) OUT
XSHUT IN
30V IN
XPG IN
XH2 IN
XH1 IN
PS IN
XSG1 IN
XSG2 IN
XV4 IN
XV3 IN
XV2 IN
XV1 IN
VDD(+15V)IN
BH1
BH2
GH1
GH2
RH1
RH2
VL
E1

DXC-537A (J,UC)
DXC-537AP(EK)

C-3 C-3

A | B | C | D | E | F | G | H | I


R-34(1/2)
DR-110
PA-113A(B)
PA-111A(G)
PA-112A(R)
IC1
IC2 TC7S08F
IC3 LM35DZ
Q1 2SC1009A
CCD HOLDER
B PA VIDEO OUT (X)
B PA VIDEO OUT (G)
G PA VIDEO OUT (X)
G PA VIDEO OUT (G)
R PA VIDEO OUT (X)
R PA VIDEO OUT (G)
MB,CN7
MB,CN8
MB,CN9
SAMPLE & HOLD
BUFFER
SHP
SHD
+5V
C-3
C-3
1
2
3
4
5
I
J
K
L
M
N
O

CCD BLOCK FRAME

CN-438 BOARD
DR-110 BOARD
NR-34 BOARD
PA-111A BOARD
PA-112A BOARD
PA-113A BOARD
TG-71 BOARD

DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

B-¥DXC537A-CCDWIRING/M

P

VA-138 Board

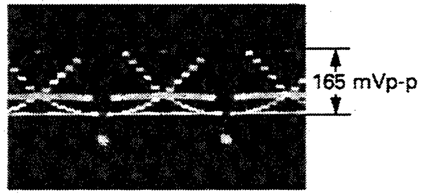
注意：
1. DC電圧はデジタル電圧計による値。
2. 波形写真、及びDC電圧は下記条件での測定。

- 本機にCA-537を接続する。
- オートホワイトバランスをとった後にグレースケールチャートを撮像し、波形モニターにて、ビデオ出力の白レベルが100 IREになる様にレンズ絞りをセットする。
- SWITCH POSITION
  - OUTPUT : CAM(DCC OFF)
  - GAIN : 0dB
  - WHITE BAL : A
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

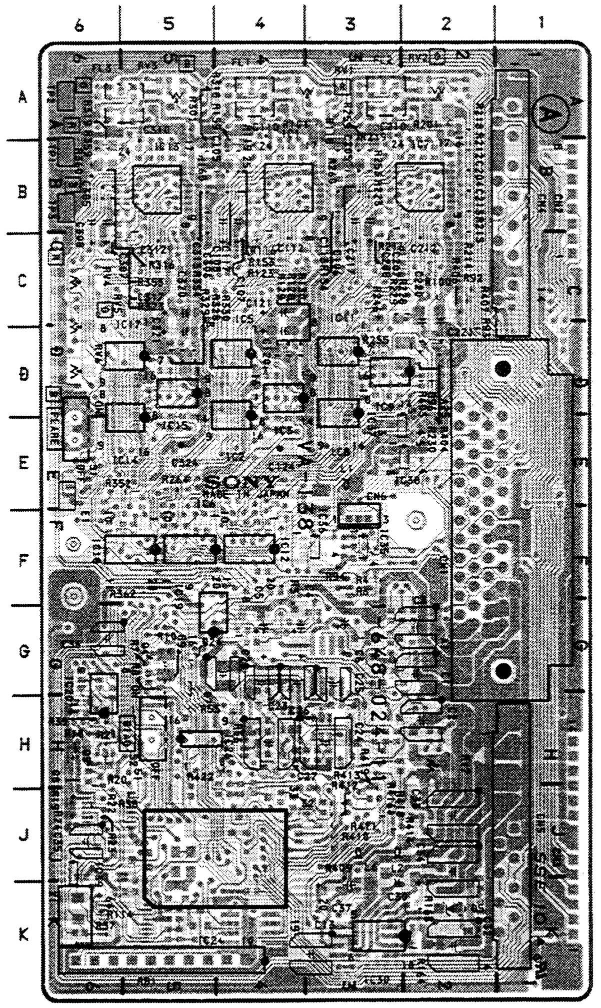
NOTE:
1. All voltage are DC mesured with a digital voltmeter.
2. All waveforms are taken and DC voltage is measured in condition below.

- Connect the camera adapter CA-537/537P to the camera.
- After the auto white balance adjustment is complete, shooting the grayscale chart, adjust the lens iris so that a white level is 100 IRE (700 mV) on the waveform monitor.
- SWITCH POSITION
  - OUTPUT : CAM(DCC OFF)
  - GAIN : 0dB
  - WHITE BAL : A
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

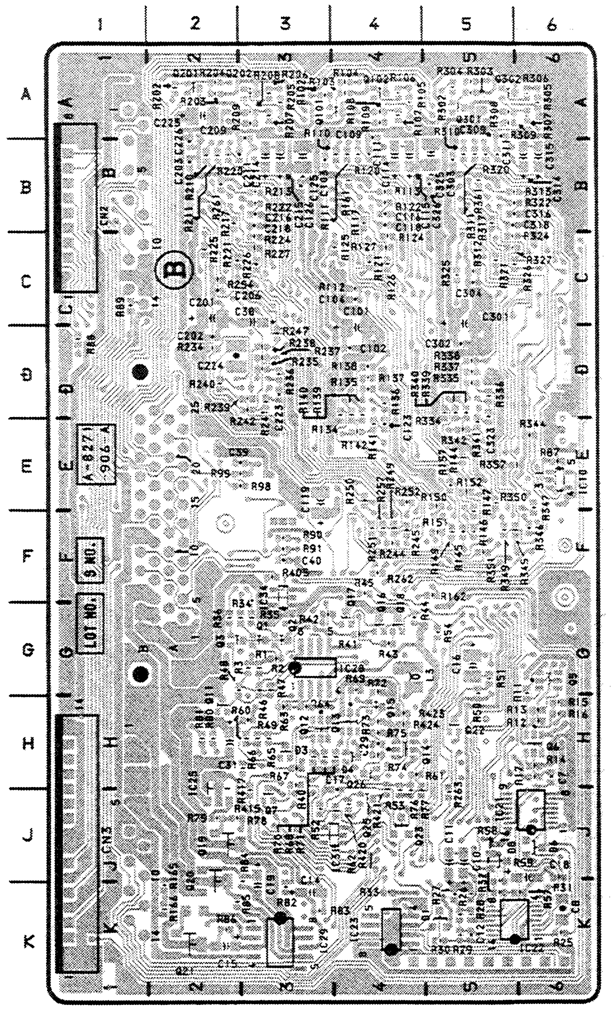
TP1, 2, 3
INPUT VIDEO (R/G/B)



SERIAL No. 10001-10293 (UC)
30001-30281 (J)
40001-40481 (EK)



1-648-024-11 COMPONENT SIDE



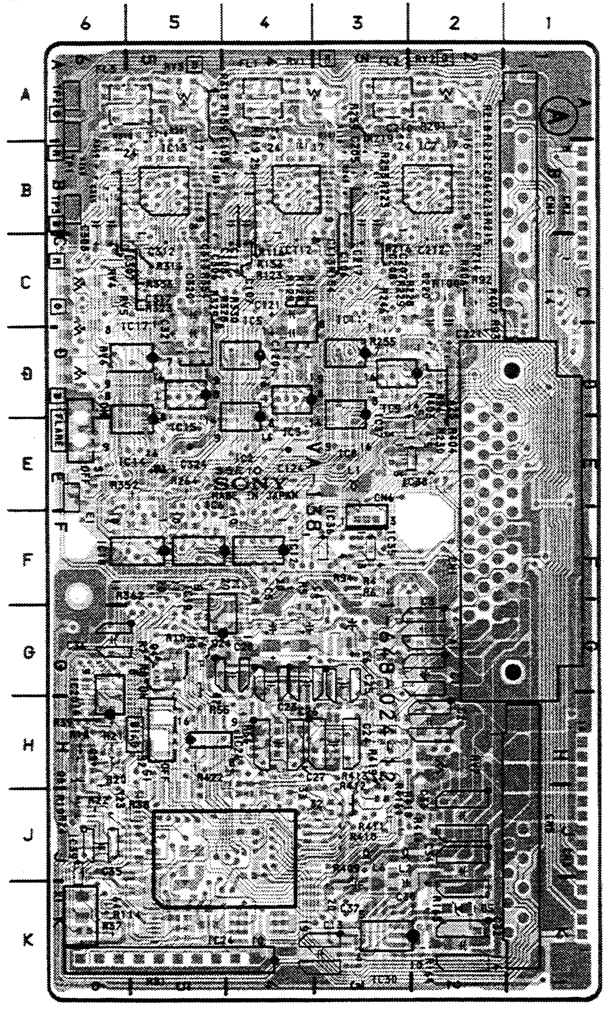
1-648-024-11 SOLDERING SIDE

VA-138(1-648-024-11)

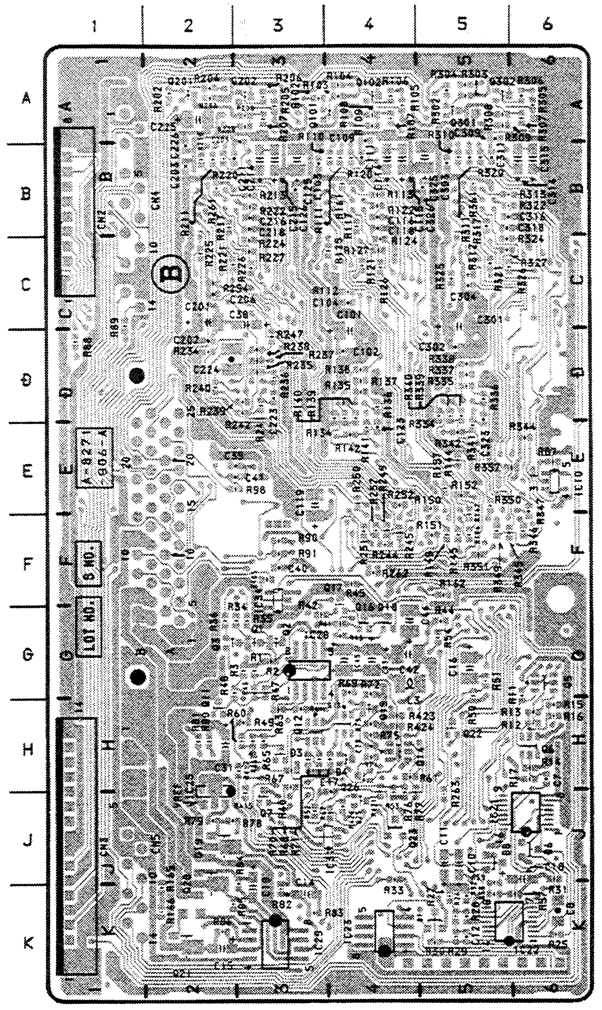
*D1	K-5	IC11	C-3	IC38	E-2	*Q17	G-4	RV2	A-2
*D3	H-3	IC12	F-4	IC39	J-6	*Q18	G-4	RV3	A-5
*D4	H-4	IC13	B-5			*Q19	J-2	RV4	C-6
D5	K-2	IC14	E-5	L1	E-3	*Q20	K-2	RV5	C-6
*D6	J-6	IC15	E-5	L2	J-3	*Q21	K-2	RV6	D-6
D7	H-5	IC17	D-5	*L3	G-5	*Q22	H-5	RV7	H-2
*D8	J-5	IC18	F-6	L6	J-3	*Q23	J-4		
		IC19	F-5			Q24	G-5	S1	E-5
E1	F-6	IC20	G-6	*Q1	G-3	*Q25	J-4	S2	H-5
		*IC21	J-5	*Q2	G-3	*Q26	H-4		
FL1	A-4	*IC22	K-6	*Q3	G-2			TP1	B-6
FL2	A-3	*IC23	K-4	Q4	G-5	*Q101	A-3	TP2	A-6
FL3	A-6	IC24	K-5	*Q5	G-6	*Q102	A-4	TP3	B-6
		*IC25	H-2	*Q6	H-6				
IC1	A-4	IC26	H-4	*Q7	J-3	*Q201	A-2	X1	K-6
IC2	E-4	*IC28	G-4	Q8	H-6	*Q202	A-3		
IC3	E-4	*IC29	K-3	Q9	H-6				
IC5	C-4	IC30	K-3	*Q11	H-2	*Q301	A-5		
IC6	E-5	*IC31	J-4	*Q12	H-3	*Q302	A-5		
IC7	B-2	*IC34	G-3	*Q13	H-4				
IC8	E-3	IC35	F-3	*Q14	H-5	RB1	K-5		
IC9	D-3	IC36	F-3	*Q15	H-4				
*IC10	E-6	IC37	E-3	*Q16	G-4	RV1	A-3		

*;SOLDERING SIDE

SERIAL No. 10351 and higher (UC)
30301 and higher (J)
40501 and higher (EK)



1-648-024-12 COMPONENT SIDE



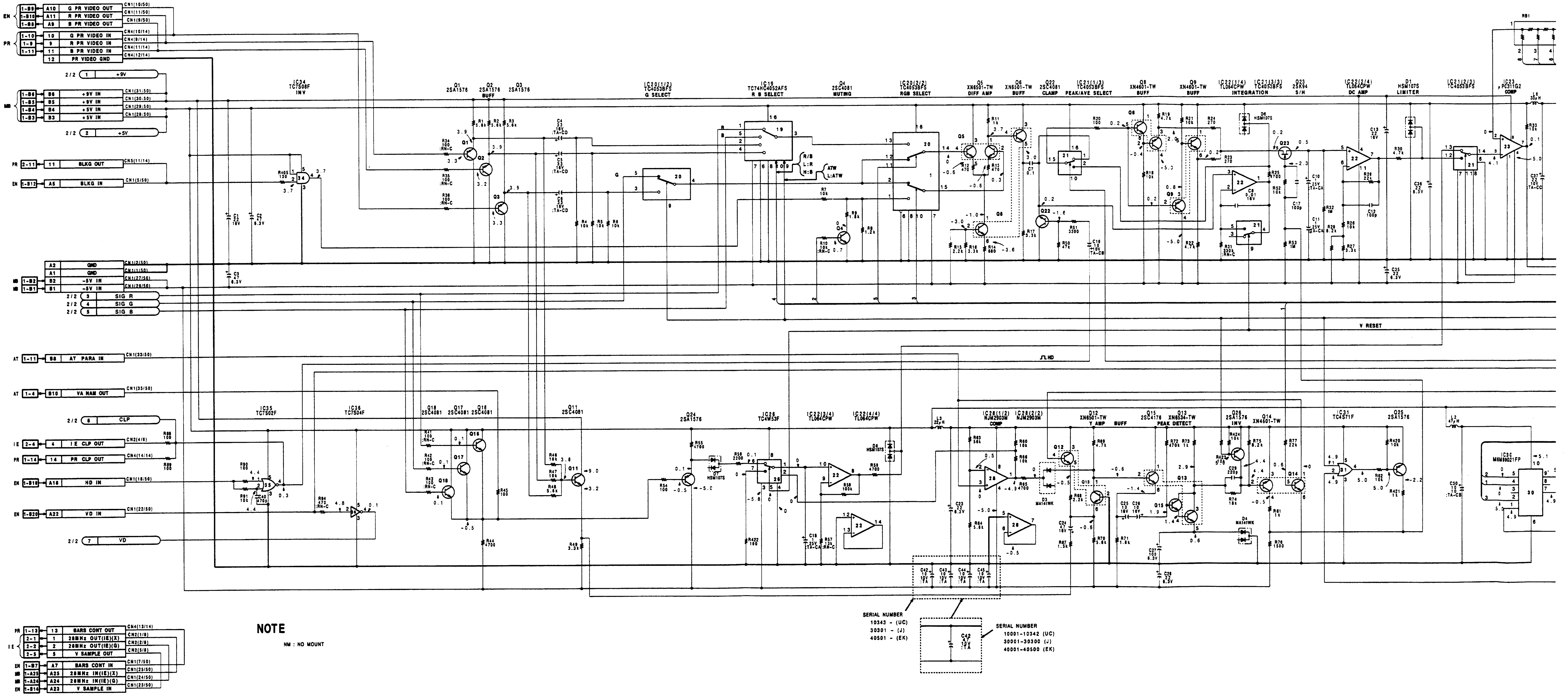
1-648-024-12 SOLDERING SIDE

VA-138(1-648-024-12)

*D1	K-5	IC11	C-3	IC38	E-2	*Q17	G-4	RV2	A-2
*D3	H-3	IC12	F-4	IC39	J-6	*Q18	G-4	RV3	A-5
*D4	H-4	IC13	B-5			*Q19	J-2	RV4	C-6
D5	K-2	IC14	E-5	L1	E-3	*Q20	K-2	RV5	C-6
*D6	J-6	IC15	E-5	L2	J-3	*Q21	K-2	RV6	D-6
D7	H-5	IC17	D-5	*L3	G-5	*Q22	H-5	RV7	H-2
*D8	J-5	IC18	F-6	L6	J-3	*Q23	J-4		
		IC19	F-5			Q24	G-5	S1	E-5
E1	F-6	IC20	G-6	*Q1	G-3	*Q25	J-4	S2	H-5
		*IC21	J-5	*Q2	G-3	*Q26	H-4		
FL1	A-4	*IC22	K-6	*Q3	G-2			TP1	B-6
FL2	A-3	*IC23	K-4	Q4	G-5	*Q101	A-3	TP2	A-6
FL3	A-6	IC24	K-5	*Q5	G-6	*Q102	A-4	TP3	B-6
		*IC25	H-2	*Q6	H-6				
IC1	A-4	IC26	H-4	*Q7	J-3	*Q201	A-2	X1	K-6
IC2	E-4	*IC28	G-4	Q8	H-6	*Q202	A-3		
IC3	E-4	*IC29	K-3	Q9	H-6				
IC5	C-4	IC30	K-3	*Q11	H-2	*Q301	A-5		
IC6	E-5	*IC31	J-4	*Q12	H-3	*Q302	A-5		
IC7	B-2	*IC34	G-3	*Q13	H-4				
IC8	E-3	IC35	F-3	*Q14	H-5	RB1	K-5		
IC9	D-3	IC36	F-3	*Q15	H-4				
*IC10	E-6	IC37	E-3	*Q16	G-4	RV1	A-3		

*;SOLDERING SIDE

VA-138(1/2)BOARD


G PR VIDEO OUT
R PR VIDEO OUT
B PR VIDEO OUT
G PR VIDEO IN
R PR VIDEO IN
B PR VIDEO IN
PR VIDEO GND
+9V IN
+5V IN
BLKG OUT
BLKG IN
GND
-5V IN
SIG R
SIG G
SIG B
AT PARA IN
VA NAM OUT
CLP
I E CLP OUT
PR CLP OUT
HD IN
VD IN
VD
BARS CONT OUT
28MHz OUT(IE)(X)
28MHz OUT(IE)(G)
V SAMPLE OUT
BARS CONT IN
28MHz IN(IE)(X)
28MHz IN(IE)(G)
V SAMPLE IN
IC34 TC7S08F INV
Q1 2SA1576
Q2 2SA1576 BUFF
Q3 2SA1576
IC20(1/2) TC4053BFS G SELECT
IC19 TC74HC4052AFS R B SELECT
Q4 2SC4081 MUTING
IC20(2/2) TC4053BFS RGB SELECT
Q5 XN6501-TW DIFF AMP
Q6 XN6501-TW BUFF
Q22 2SC4081 CLAMP
IC21(1/3) TC4053BFS PEAK/AVE SELECT
Q8 XN4601-TW BUFF
Q9 XN4601-TW BUFF
IC22(1/4) TL064CPW INTEGRATION
IC21(3/3) TC4053BFS
Q23 2SK94 S/H
IC22(2/4) TL064CPW DC AMP
D1 HSM107S LIMITER
IC21(2/3) TC4053BFS
IC23 PC311G2 COMP
V RESET
HD
IC35 TC7S02F
IC36 TC7S04F
Q18 2SC4081
Q17 2SC4081
Q16 2SC4081
Q11 2SC4081
Q24 2SA1576
IC26 TC4W53F
IC22(3/4) TL064CPW
IC22(4/4) TL064CPW
IC28(1/2) NJM2903M COMP
IC28(2/2) NJM2903M
Q12 XN6501-TW Y AMP BUFF
Q15 2SC4178
Q13 XN6534-TW PEAK DETECT
Q26 2SA1576 INV
Q14 XN4601-TW
IC31 TC4S71F
Q25 2SA1576
IC30 M6M80021FP
SERIAL NUMBER 10343 - (UC) 30301 - (J) 40501 - (EK)
SERIAL NUMBER 10001-10342 (UC) 30001-30300 (J) 40001-40500 (EK)

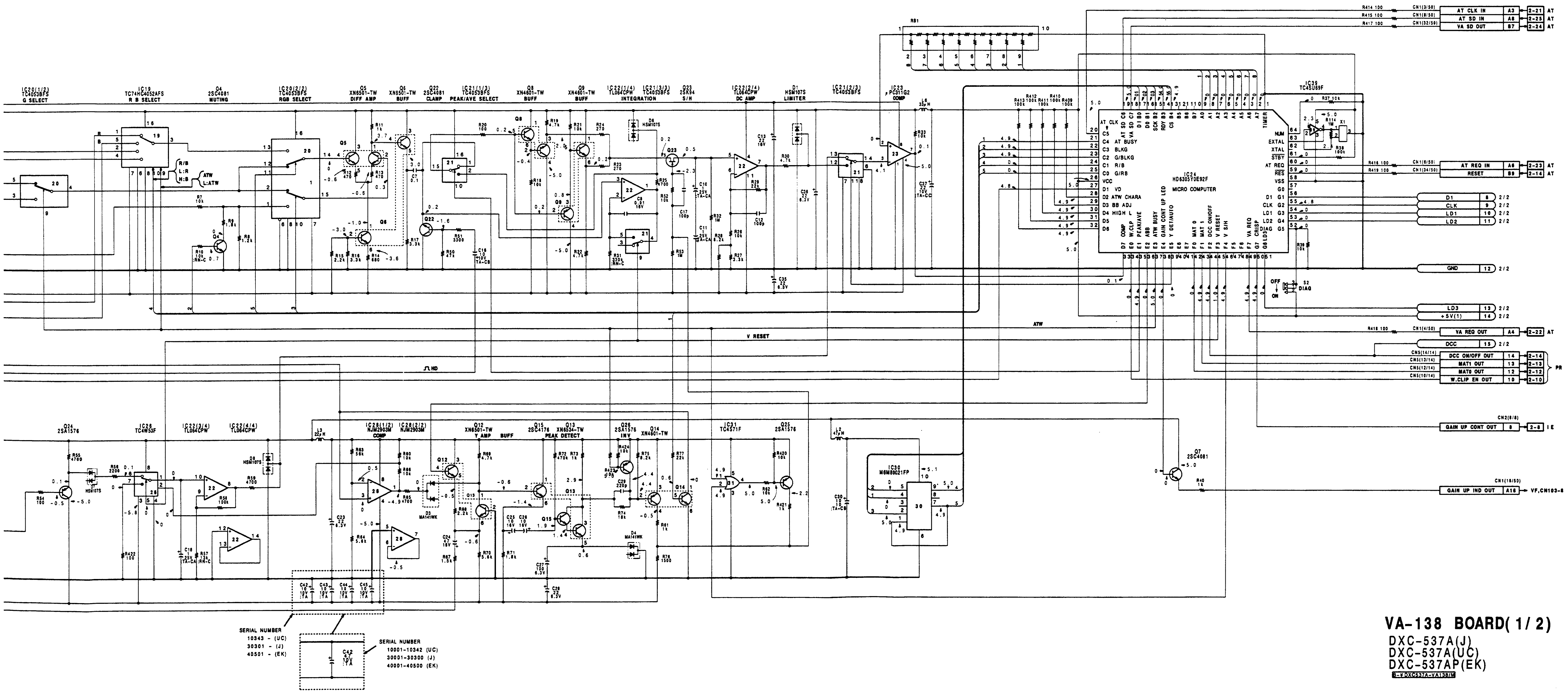
NOTE

NM : NO MOUNT

DXC-537A (J,UC)
DXC-537AP(EK)

C-5 C-5

A B C D E F G H


IC20(1/2) TC4052BFS G SELECT
IC19 TC74HC4052AFS R B SELECT
Q4 2SC4081 MUTING
IC20(2/2) TC4053BFS RGB SELECT
Q5 XN6501-TW DIFF AMP
Q6 XN6501-TW BUFF
Q22 2SC4081 CLAMP
IC21(1/3) TC4053BFS PEAK/AVE SELECT
Q8 XN4601-TW BUFF
Q9 XN4601-TW BUFF
IC22(1/4) TL064CPW
IC21(3/3) TC4053BFS INTEGRATION
Q23 2SK94 S/H
IC22(2/4) TL064CPW DC AMP
D1 HSM107S LIMITER
IC21(2/3) TC4053BFS
IC23 μPC311G2 COMP
IC24 HD6305Y0E92F MICRO COMPUTER
IC39 TC4SU69F
R/B L:R H:B
ATW L:ATW
V RESET
ATW
HD
AT CLK IN
AT SD IN
VA SD OUT
AT REQ IN
RESET
D1
CLK
LD1
LD2
GND
LD3
+5V(1)
VA REQ OUT
DCC
DCC ON/OFF OUT
MAT1 OUT
MAT0 OUT
W.CLIP EN OUT
PR
GAIN UP CONT OUT
GAIN UP IND OUT
VF,CN103-8
S2 DIAG
OFF ON
Q24 2SA1576
IC26 TC4W53F
IC22(3/4) TL064CPW
IC22(4/4) TL064CPW
IC28(1/2) NJM2903M COMP
IC28(2/2) NJM2903M
Q12 XN6501-TW Y AMP
BUFF
Q15 2SC4176
Q13 XN6534-TW PEAK DETECT
Q26 2SA1576 INV
Q14 XN4601-TW
IC31 TC4S71F
Q25 2SA1576
IC30 M6M80021FP
Q7 2SC4081
SERIAL NUMBER 10343 - (UC) 30301 - (J) 40501 - (EK)
SERIAL NUMBER 10001-10342 (UC) 30001-30300 (J) 40001-40500 (EK)
1
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C-5
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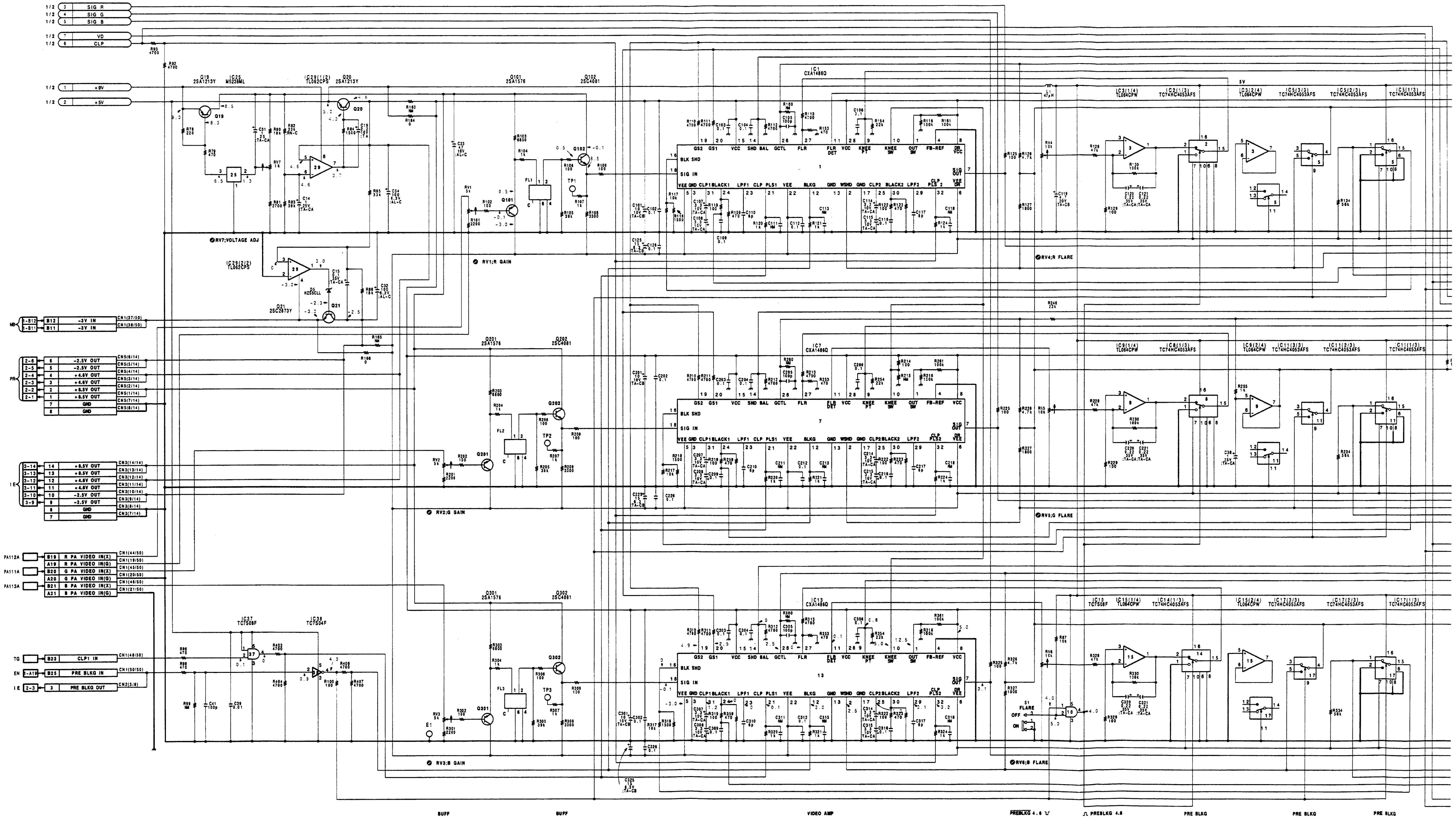
VA-138 BOARD(1/2)

DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

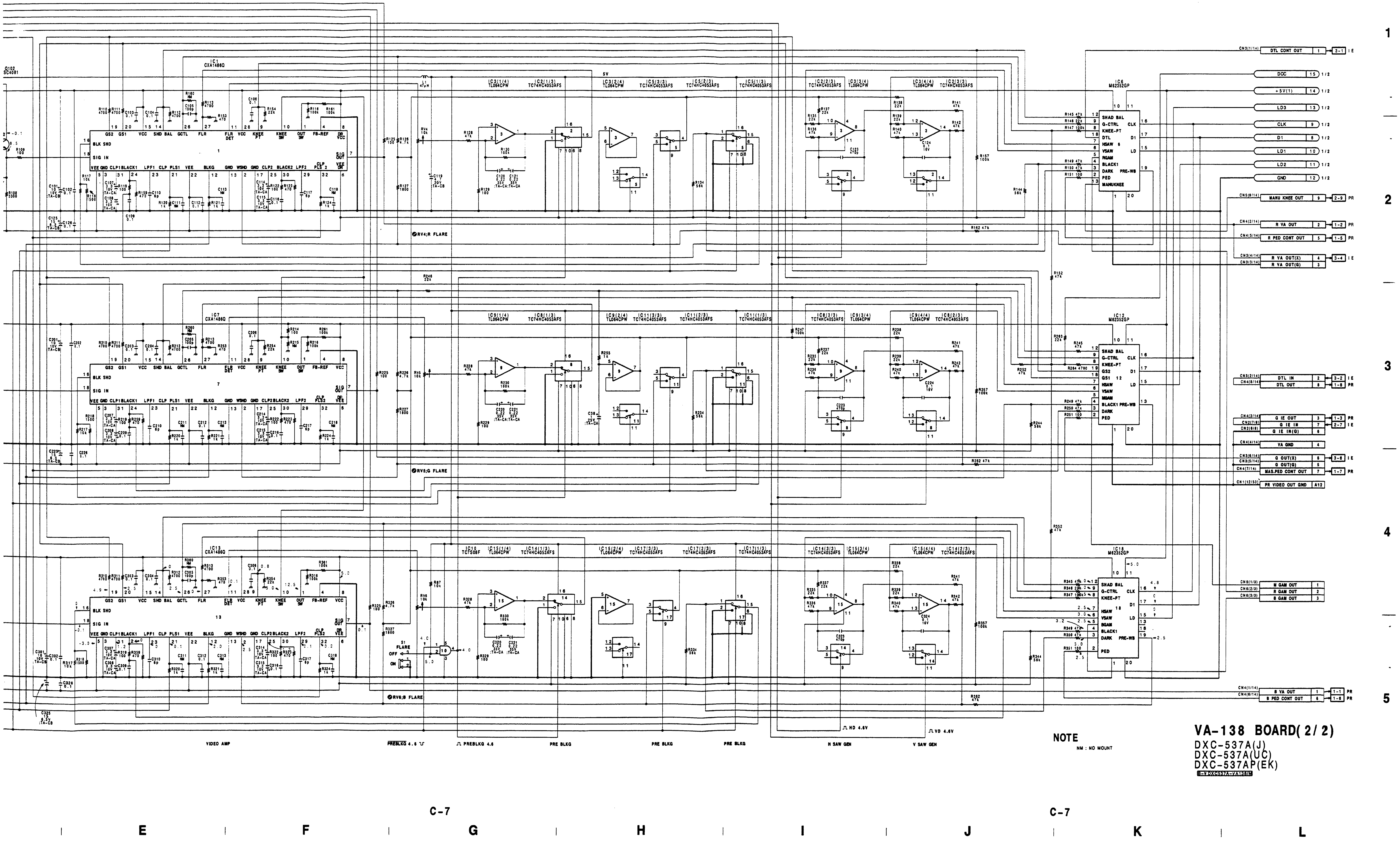
VA-138(2/2)BOARD


SIG R
SIG G
SIG B
VD
CLP
+9V
+5V
-3V IN
-2.5V OUT
+4.6V OUT
+8.5V OUT
GND
+4.8V OUT
R PA VIDEO IN(X)
R PA VIDEO IN(Q)
G PA VIDEO IN(X)
G PA VIDEO IN(Q)
B PA VIDEO IN(X)
B PA VIDEO IN(Q)
CLP1 IN
PRE BLKG IN
PRE BLKG OUT
TG
EN
IE
PR
MB
PA112A
PA111A
PA113A
Q19 2SA1213Y
IC25 M5236ML
IC29(1/2) TL062CPS
Q20 2SA1213Y
IC29(2/2) TL062CPS
Q21 2SC2873Y
D3 HZS5CLL
Q101 2SA1576
Q102 2SC4081
Q201 2SA1576
Q202 2SC4081
Q301 2SA1576
Q302 2SC4081
IC1 CXA1486Q
IC7 CXA1486Q
IC13 CXA1486Q
IC37 TC7S08F
IC38 TC7S04F
IC3(1/4) TL064CPW
IC2(1/3) TC74HC4053AFS
IC3(2/4) TL064CPW
IC5(3/3) TC74HC4053AFS
IC5(2/3) TC74HC4053AFS
IC5(1/3) TC74HC4053AFS
IC9(1/4) TL064CPW
IC8(1/3) TC74HC4053AFS
IC9(2/4) TL064CPW
IC11(3/3) TC74HC4053AFS
IC11(2/3) TC74HC4053AFS
IC11(1/3) TC74HC4053AFS
IC16 TC7S08F
IC15(1/4) TL064CPW
IC14(1/3) TC74HC4053AFS
IC15(2/4) TL064CPW
IC17(3/3) TC74HC4053AFS
IC17(2/3) TC74HC4053AFS
IC17(1/3) TC74HC4053AFS
RV7;VOLTAGE ADJ
RV1;R GAIN
RV2;G GAIN
RV3;B GAIN
RV4;R FLARE
RV5;G FLARE
RV6;B FLARE
FL1
FL2
FL3
TP1
TP2
TP3
E1
S1 FLARE OFF ON
BLK SHD
SIG IN
SIG OUT
BUFF
BUFF
VIDEO AMP
PREBLKG 4.6
PREBLKG 4.6
PRE BLKG
PRE BLKG
PRE BLKG

DXC-537A (J,UC)
DXC-537AP(EK)

C-7 C-7

A | B | C | D | E | F | G | H |


IC1 CXA1486Q
IC7 CXA1486Q
IC13 CXA1486Q
IC3(1/4) TL064CPW
IC2(1/3) TC74HC4053AFS
IC5(3/3) TC74HC4053AFS
IC5(1/3) TC74HC4053AFS
IC2(2/3) TC74HC4053AFS
IC3(3/4) TL064CPW
IC3(4/4) TL064CPW
IC6 M62352GP
IC9(1/4) TL064CPW
IC8(1/3) TC74HC4053AFS
IC11(1/3) TC74HC4053AFS
IC12 M62352GP
IC10 TC7S08F
IC15(1/4) TL064CPW
IC14(1/3) TC74HC4053AFS
IC17(1/3) TC74HC4053AFS
IC18 M62352GP
RV4;R FLARE
RV5;G FLARE
RV6;B FLARE
S1 FLARE OFF ON
VIDEO AMP
PREBLKG 4.6
PREBLKG 4.6
PRE BLKG
PRE BLKG
PRE BLKG
HD 4.6V
VD 4.6V
H SAW GEN
V SAW GEN
CN3(1/14) DTL CONT OUT 1 3-1 IE
DCC 15 1/2
+5V(1) 14 1/2
LD3 13 1/2
CLK 9 1/2
D1 8 1/2
LD1 10 1/2
LD2 11 1/2
GND 12 1/2
CN5(9/14) MANU KNEE OUT 9 2-9 PR
CN4(2/14) R VA OUT 2 1-2 PR
CN4(5/14) R PED CONT OUT 5 1-5 PR
CN3(4/14) R VA OUT(X) 4 3-4 IE
CN3(3/14) R VA OUT(G) 3
CN3(2/14) DTL IN 2 3-2 IE
CN4(8/14) DTL OUT 8 1-8 PR
CN4(3/14) G IE OUT 3 1-3 PR
CN2(7/8) G IE IN 7 2-7 IE
CN2(6/8) G IE IN(G) 6
CN4(4/14) VA GND 4
CN3(6/14) G OUT(X) 6 3-6 IE
CN3(5/14) G OUT(G) 5
CN4(7/14) MAS.PED CONT OUT 7 1-7 PR
CN1(12/50) PR VIDEO OUT GND A12
CN6(1/3) M GAM OUT 1
CN6(2/3) R GAM OUT 2
CN6(3/3) B GAM OUT 3
CN4(1/14) B VA OUT 1 1-1 PR
CN4(6/14) B PED CONT OUT 6 1-6 PR
1
2
3
4
5
C-7
C-7
E
F
G
H
I
J
K
L

NOTE

NM : NO MOUNT

VA-138 BOARD(2/2)

DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)
B-¥DXC537A-VA138/M

PR-180 Board

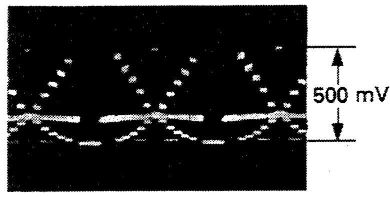
注意：
1. DC電圧はデジタル電圧計による値。
2. 波形写真、及びDC電圧は下記条件での測定。

- 本機にCA-537を接続する。
- オートホワイトバランスをとった後にグレースケールチャートを撮像し、波形モニターにて、ビデオ出力の白レベルが100 IREになる様にレンズ絞りをセットする。
- SWITCH POSITION
  - OUTPUT : CAM(DCC OFF)
  - GAIN : 0dB
  - WHITE BAL : A
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

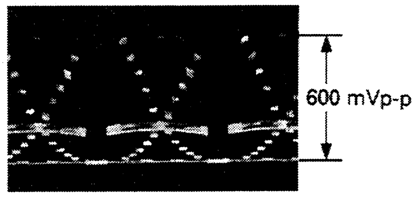
NOTE:
1. All voltage are DC mesured with a digital voltmeter.
2. All waveforms are taken and DC voltage is measured in condition below.

- Connect the camera adapter CA-537/537P to the camera.
- After the auto white balance adjustment is complete, shooting the grayscale chart, adjust the lens iris so that a white level is 100 IRE (700 mV) on the waveform monitor.
- SWITCH POSITION
  - OUTPUT : CAM(DCC OFF)
  - GAIN : 0dB
  - WHITE BAL : A
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

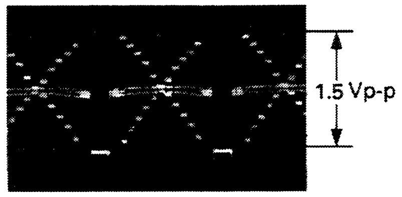
TP1, 5, 9
PRE KNEE (R/G/B)



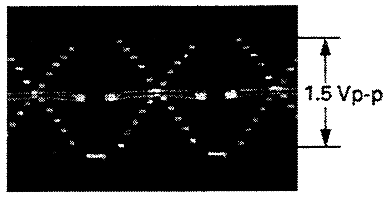
TP2, 6, 10
DELAYED (R/G/B)



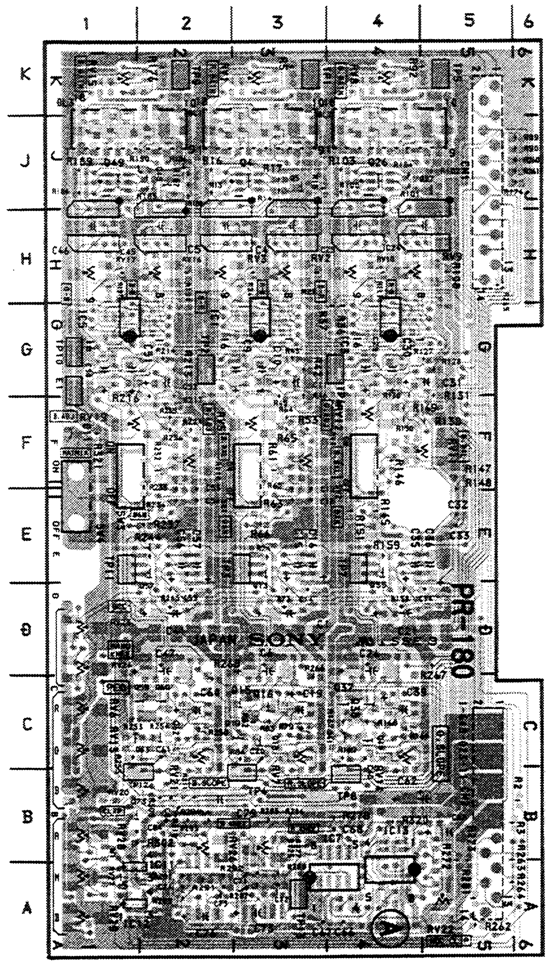
TP3, 7, 11
GAMMA COMP. (R/G/B)



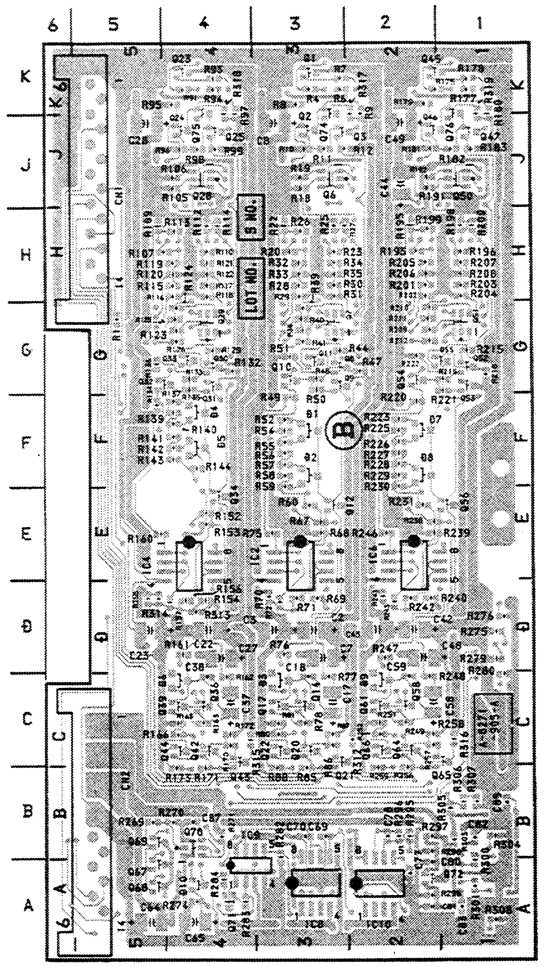
TP4, 8,12
DETAIL MIX (R/G/B)



SERIAL No. 10001-10293 (UC)
30001-30281 (J)
40001-40481 (EK)



1-648-023-11 COMPONENT SIDE



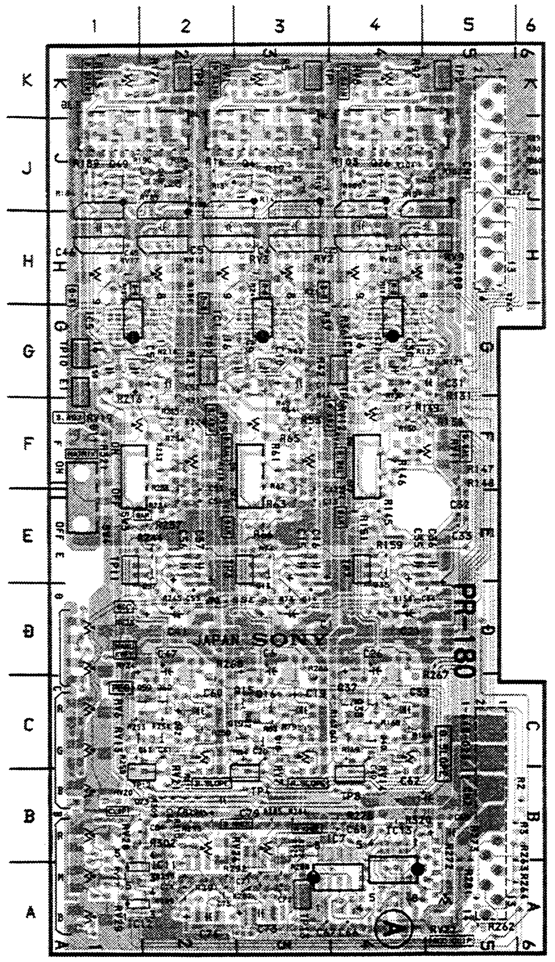
1-648-023-11 SOLDERING SIDE

PR-180(1-648-023-11)

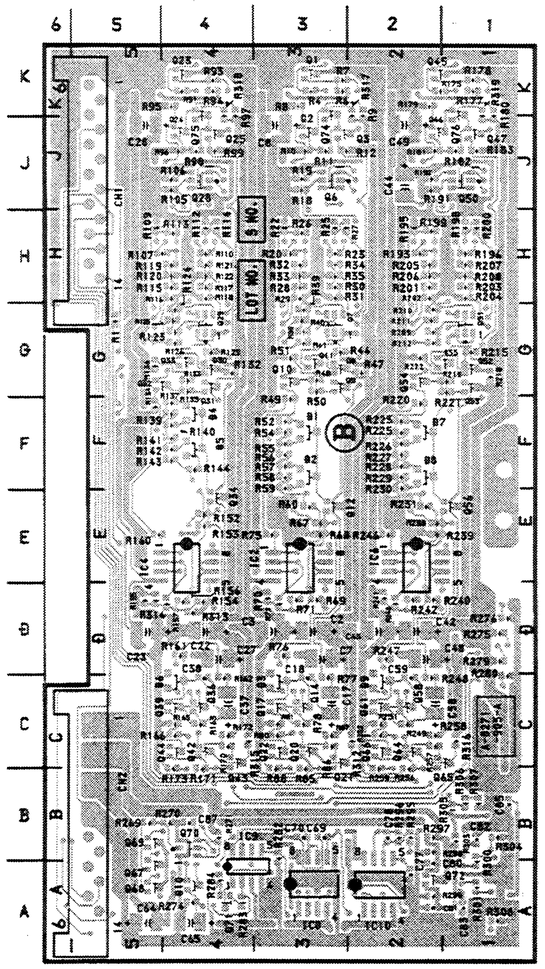
*CN1	J-5	IC3	G-4	*Q12	E-2	Q35	D-4	*Q58	C-2	RV4	F-4	RV27	A-1
*CN2	B-5	*IC4	E-5	Q13	D-3	*Q36	C-4	Q59	C-2	RV5	F-2	RV28	B-1
		IC5	G-1	*Q14	C-3	Q37	C-4	Q60	C-2	RV6	C-1	RV29	A-1
DL1	K-2	*IC6	E-2	Q15	C-3	Q38	C-4	*Q61	C-2	RV7	B-3		
DL2	K-3	IC7	B-4	Q16	C-3	*Q39	C-5	Q62	C-2	RV8	K-4	SW1	E-2
DL3	K-1	*IC8	A-3	*Q17	C-3	Q40	C-4	Q63	C-2	RV9	H-5	SW2	F-4
		*IC9	B-4	Q18	C-3	Q41	C-4	*Q64	C-2	RV10	H-4	SW3	E-1
*D1	F-3	*IC10	A-2	Q19	C-3	*Q42	C-4	*Q65	B-1	RV11	F-5	SW4	E-1
*D2	F-3	IC11	A-2	*Q20	C-3	*Q43	B-4	*Q66	C-2	RV12	F-4		
*D3	C-3	IC12	A-1	*Q21	B-3	*Q44	C-5	*Q67	A-5	RV13	C-1	TP1	K-3
*D4	F-4	IC13	B-4	*Q22	C-3	*Q45	K-2	*Q68	A-5	RV14	B-4	TP2	G-2
*D5	F-4			*Q23	K-4	*Q46	J-2	*Q69	B-5	RV15	K-1	TP3	E-2
*D6	C-5	*Q1	K-3	*Q24	J-4	*Q47	J-1	*Q70	B-4	RV16	H-2	TP4	B-3
*D7	F-2	*Q2	J-3	*Q25	J-4	Q48	J-2	*Q71	A-4	RV17	H-1	TP5	K-5
*D8	F-2	*Q3	J-2	Q26	J-4	Q49	J-1	*Q72	A-1	RV18	F-2	TP6	G-4
*D9	C-2	Q4	J-3	Q27	J-5	*Q50	J-1	Q73	B-1	RV19	F-1	TP7	E-4
*D10	A-4	Q5	J-3	*Q28	J-4	*Q51	G-1	*Q74	J-3	RV20	B-1	TP8	B-4
D11	F-1	*Q6	J-3	*Q29	G-4	*Q52	G-1	*Q75	J-4	RV21	B-2	TP9	K-2
		*Q7	G-2	*Q30	G-4	*Q53	F-1	*Q76	J-1	RV22	A-5	TP10	G-1
E1	G-1	*Q8	G-2	*Q31	F-4	*Q54	G-2			RV23	D-1	TP11	E-1
		*Q9	G-2	*Q32	G-5	*Q55	G-1	RV1	K-2	RV24	D-1	TP12	B-1
IC1	G-2	*Q10	G-3	*Q33	G-4	*Q56	E-1	RV2	H-3	RV25	B-3	TP13	A-3
*IC2	E-3	*Q11	G-3	*Q34	E-4	Q57	D-2	RV3	H-3	RV26	B-2		

*;SOLDERING SIDE

SERIAL No. 10351 and higher (UC)
30301 and higher (J)
40501 and higher (EK)



1-648-023-12 COMPONENT SIDE



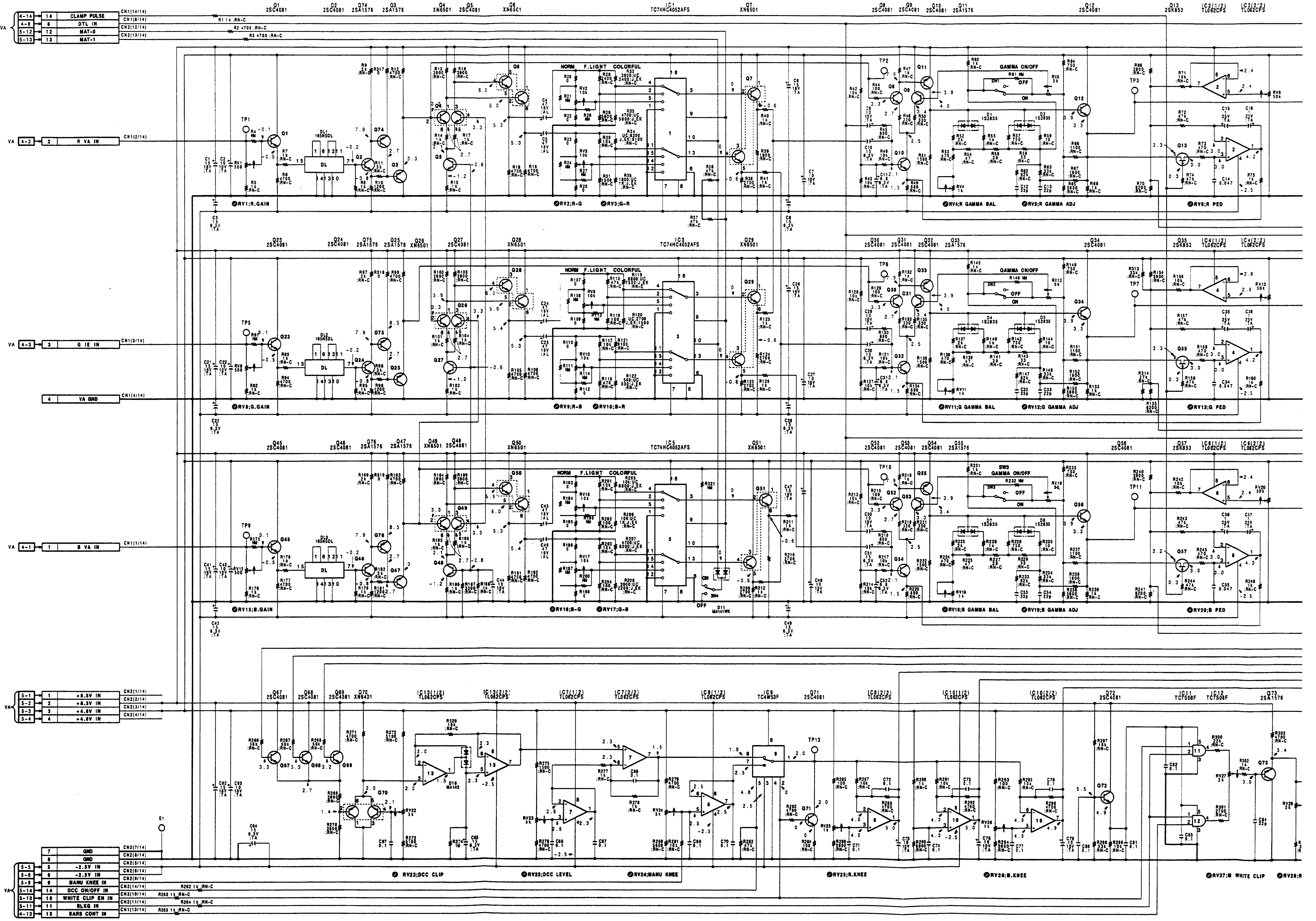
1-648-023-12 SOLDERING SIDE

PR-180(1-648-023-12)

*CN1	J-5	IC3	G-4	*Q12	E-2	Q35	D-4	*Q58	C-2	RV4	F-4	RV27	A-1
*CN2	B-5	*IC4	E-5	Q13	D-3	*Q36	C-4	Q59	C-2	RV5	F-2	RV28	B-1
		IC5	G-1	*Q14	C-3	Q37	C-4	Q60	C-2	RV6	C-1	RV29	A-1
DL1	K-2	*IC6	E-2	Q15	C-3	Q38	C-4	*Q61	C-2	RV7	B-3		
DL2	K-3	IC7	B-4	Q16	C-3	*Q39	C-5	Q62	C-2	RV8	K-4	SW1	E-2
DL3	K-1	*IC8	A-3	*Q17	C-3	Q40	C-4	Q63	C-2	RV9	H-5	SW2	F-4
		*IC9	B-4	Q18	C-3	Q41	C-4	*Q64	C-2	RV10	H-4	SW3	E-1
*D1	F-3	*IC10	A-2	Q19	C-3	*Q42	C-4	*Q65	B-1	RV11	F-5	SW4	E-1
*D2	F-3	IC11	A-2	*Q20	C-3	*Q43	B-4	*Q66	C-2	RV12	F-4		
*D3	C-3	IC12	A-1	*Q21	B-3	*Q44	C-5	*Q67	A-5	RV13	C-1	TP1	K-3
*D4	F-4	IC13	B-4	*Q22	C-3	*Q45	K-2	*Q68	A-5	RV14	B-4	TP2	G-2
*D5	F-4			*Q23	K-4	*Q46	J-2	*Q69	B-5	RV15	K-1	TP3	E-2
*D6	C-5	*Q1	K-3	*Q24	J-4	*Q47	J-1	*Q70	B-4	RV16	H-2	TP4	B-3
*D7	F-2	*Q2	J-3	*Q25	J-4	Q48	J-2	*Q71	A-4	RV17	H-1	TP5	K-5
*D8	F-2	*Q3	J-2	Q26	J-4	Q49	J-1	*Q72	A-1	RV18	F-2	TP6	G-4
*D9	C-2	Q4	J-3	Q27	J-5	*Q50	J-1	Q73	B-1	RV19	F-1	TP7	E-4
*D10	A-4	Q5	J-3	*Q28	J-4	*Q51	G-1	*Q74	J-3	RV20	B-1	TP8	B-4
D11	F-1	*Q6	J-3	*Q29	G-4	*Q52	G-1	*Q75	J-4	RV21	B-2	TP9	K-2
		*Q7	G-2	*Q30	G-4	*Q53	F-1	*Q76	J-1	RV22	A-5	TP10	G-1
E1	G-1	*Q8	G-2	*Q31	F-4	*Q54	G-2			RV23	D-1	TP11	E-1
		*Q9	G-2	*Q32	G-5	*Q55	G-1	RV1	K-2	RV24	D-1	TP12	B-1
IC1	G-2	*Q10	G-3	*Q33	G-4	*Q56	E-1	RV2	H-3	RV25	B-3	TP13	A-3
*IC2	E-3	*Q11	G-3	*Q34	E-4	Q57	D-2	RV3	H-3	RV26	B-2		

*;SOLDERING SIDE

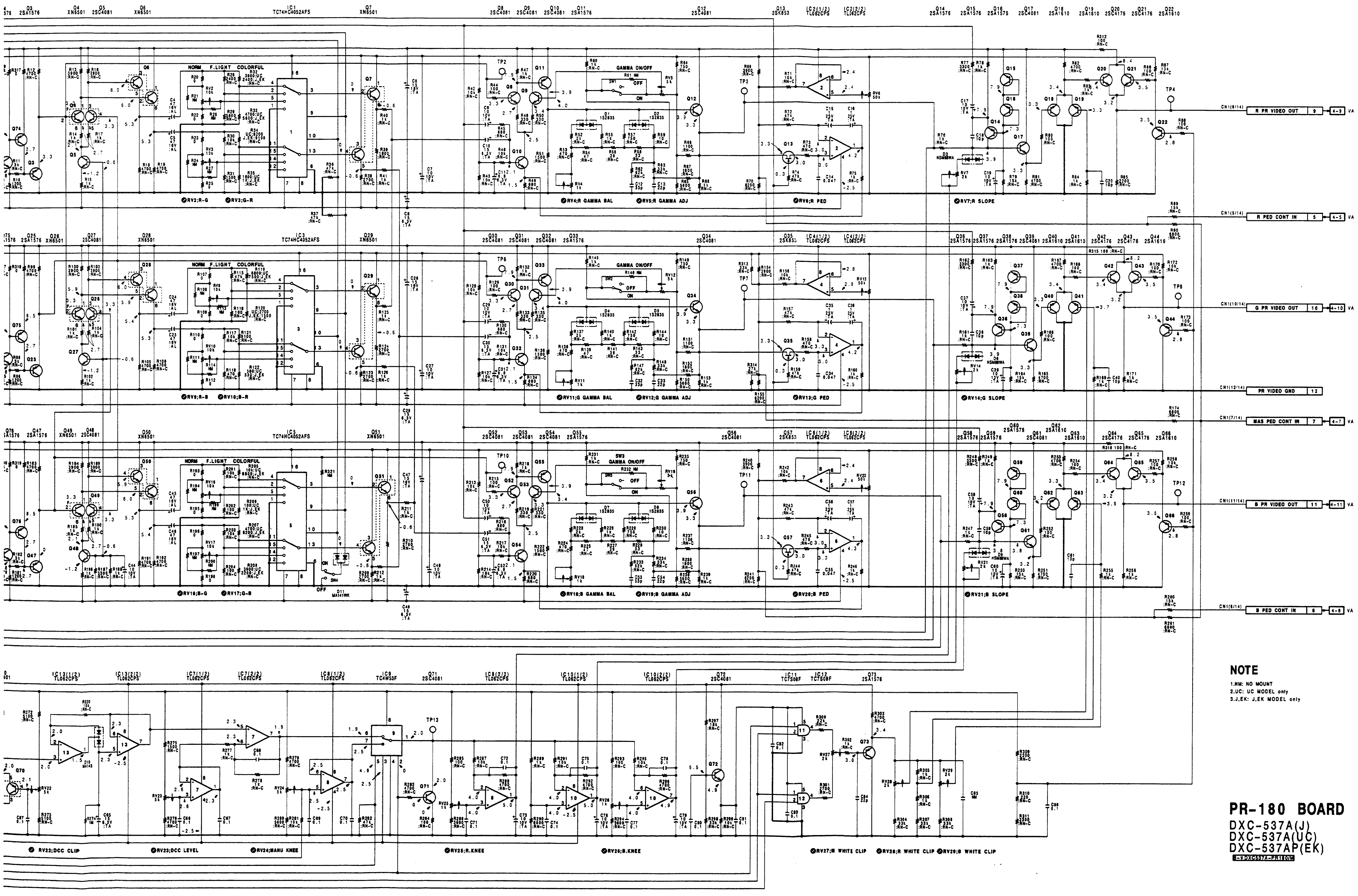
PR-180 BOARD


VA
CLAMP PULSE
DTL IN
MAT-0
MAT-1
R VA IN
G IE IN
VA GND
B VA IN
+8.5V IN
+8.5V IN
+4.8V IN
+4.8V IN
GND
GND
-2.5V IN
-2.5V IN
MANU KNEE IN
DCC ON/OFF IN
WHITE CLIP EN IN
BLKG IN
BARS CONT IN
RV1;R.GAIN
RV2;R-G
RV3;G-R
RV4;R GAMMA BAL
RV5;R GAMMA ADJ
RV6;R PED
RV8;G.GAIN
RV9;R-B
RV10;B-R
RV11;G GAMMA BAL
RV12;G GAMMA ADJ
RV13;G PED
RV15;B.GAIN
RV16;B-G
RV17;G-B
RV18;B GAMMA BAL
RV19;B GAMMA ADJ
RV20;B PED
RV22;DCC CLIP
RV23;DCC LEVEL
RV24;MANU KNEE
RV25;R.KNEE
RV26;B.KNEE
RV27;M WHITE CLIP
NORM F.LIGHT COLORFUL
GAMMA ON/OFF
OFF
ON
TC74HC4052AFS
TL082CPS
TC4W53F
TC7S08F
2SC4081
2SA1576
XN6501
2SK853
DL
TP1
TP5
TP9
TP13
E1

DXC-537A (J,UC)
DXC-537AP(EK)

C-9 C-9

A B C D E F G H


IC1 TC74HC4052AFS
IC3 TC74HC4052AFS
IC5 TC74HC4052AFS
NORM F.LIGHT COLORFUL
GAMMA ON/OFF
SW1
SW2
SW3
SW4
ON
OFF
TP2
TP3
TP4
TP6
TP7
TP8
TP10
TP11
TP12
TP13
RV2;R-G
RV3;G-R
RV4;R GAMMA BAL
RV5;R GAMMA ADJ
RV6;R PED
RV7;R SLOPE
RV9;R-B
RV10;B-R
RV11;G GAMMA BAL
RV12;G GAMMA ADJ
RV13;G PED
RV14;G SLOPE
RV16;B-G
RV17;G-B
RV18;B GAMMA BAL
RV19;B GAMMA ADJ
RV20;B PED
RV21;B SLOPE
RV22;DCC CLIP
RV23;DCC LEVEL
RV24;MANU KNEE
RV25;R.KNEE
RV26;B.KNEE
RV27;R WHITE CLIP
RV28;R WHITE CLIP
RV29;B WHITE CLIP
CN1(8/14) R PR VIDEO OUT 9 4-9 VA
CN1(5/14) R PED CONT IN 5 4-5 VA
CN1(10/14) G PR VIDEO OUT 10 4-10 VA
CN1(12/14) PR VIDEO GND 12
CN1(7/14) MAS PED CONT IN 7 4-7 VA
CN1(11/14) B PR VIDEO OUT 11 4-11 VA
CN1(6/14) B PED CONT IN 6 4-6 VA
IC13(1/2) TL062CPS
IC13(2/2) TL062CPS
IC7(1/2) TL062CPS
IC7(2/2) TL062CPS
IC8(1/2) TL062CPS
IC9 TC4W53F
IC8(2/2) TL062CPS
IC10(1/2) TL062CPS
IC10(2/2) TL062CPS
IC11 TC7S08F
IC12 TC7S08F
Q71 2SC4081
Q72 2SC4081
Q73 2SA1576
D11 MA141WK
1
2
3
4
5

NOTE

1.NM: NO MOUNT
2.UC: UC MODEL only
3.J,EK: J,EK MODEL only

PR-180 BOARD

DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

B-¥DXC537A-PR180/M

C-9 C-9

E F G H I J K L

IE-40 BOARD

IE-40 Board

注意：

1. DC電圧はデジタル電圧計による値。
2. 波形写真、及びDC電圧は下記条件での測定。

- 本機にCA-537を接続する。
- オートホワイトバランスをとった後にグレースケールチャートを撮像し、波形モニターにて、ビデオ出力の白レベルが100 IREになる様にレンズ絞りをセットする。
- SWITCH POSITION

• OUTPUT	: CAM(DCC OFF)	• CLOCK	: OFF
• GAIN	: 0dB	• EVS	: OFF
• WHITE BAL	: A	• TURBO GAIN	: OFF
• SHUTTER	: OFF	• MATRIX	: OFF
• ZEBRA MARKER	: OFF	• ATW	: OFF
• PHASE	: 0°	• A IRIS MODE	: STD

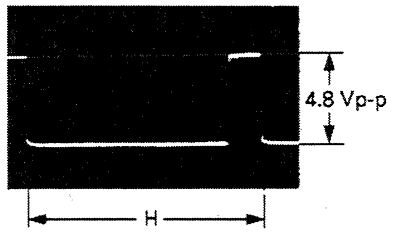
NOTE:

1. All voltage are DC mesured with a digital voltmeter.
2. All waveforms are taken and DC voltage is measured in condition below.

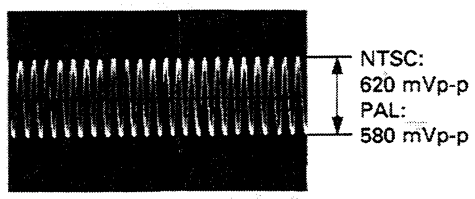
- Connect the camera adapter CA-537/537P to the camera.
- After the auto white balance adjustment is complete, shooting the grayscale chart, adjust the lens iris so that a white level is 100 IRE (700 mV) on the waveform monitor.
- SWITCH POSITION

• OUTPUT	: CAM(DCC OFF)	• CLOCK	: OFF
• GAIN	: 0dB	• EVS	: OFF
• WHITE BAL	: A	• TURBO GAIN	: OFF
• SHUTTER	: OFF	• MATRIX	: OFF
• ZEBRA MARKER	: OFF	• ATW	: OFF
• PHASE	: 0°	• A IRIS MODE	: STD

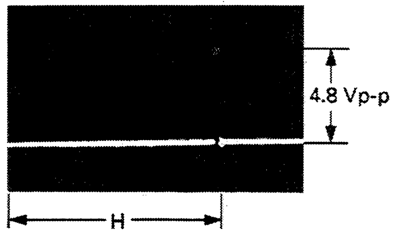
CN2-3pin
PRE BLKG



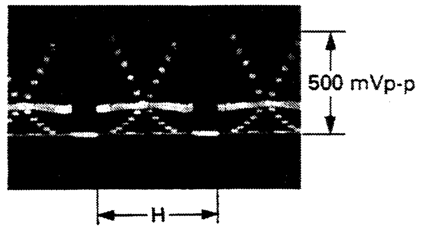
CN2-1pin
28MHz



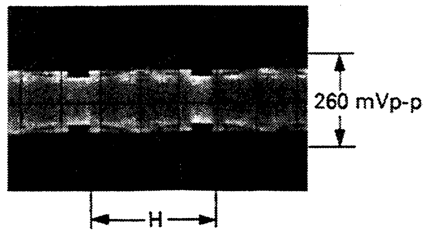
CN2-4pin
CLP



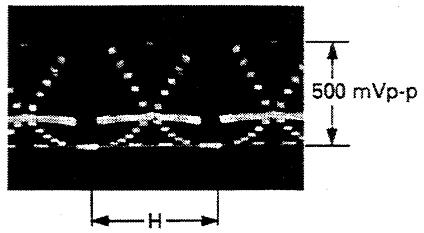
CN3-4pin, TP12, IC1-1pin
R/G/B



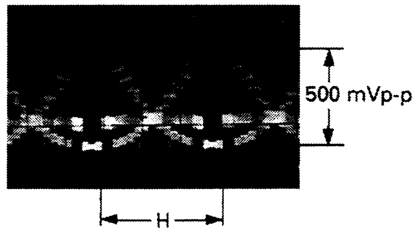
IC1-12pin
IC1 G OUT



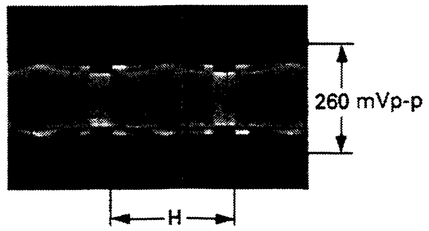
TP2
G IE VIDEO



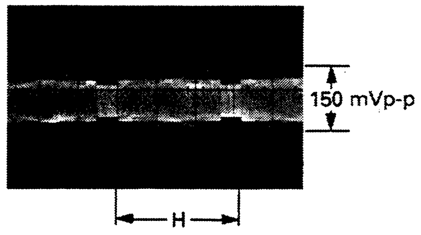
TP4
2H DELAYED G



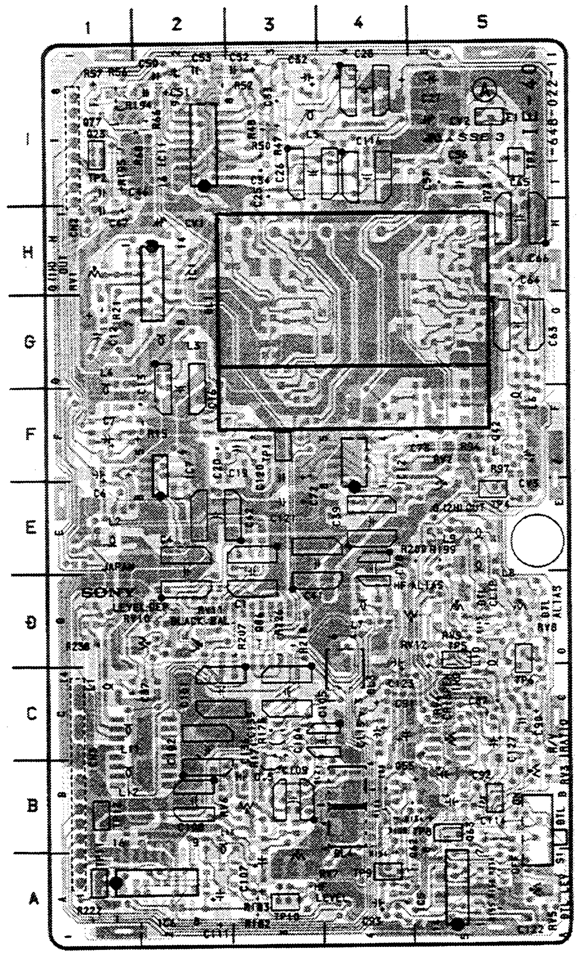
TP1



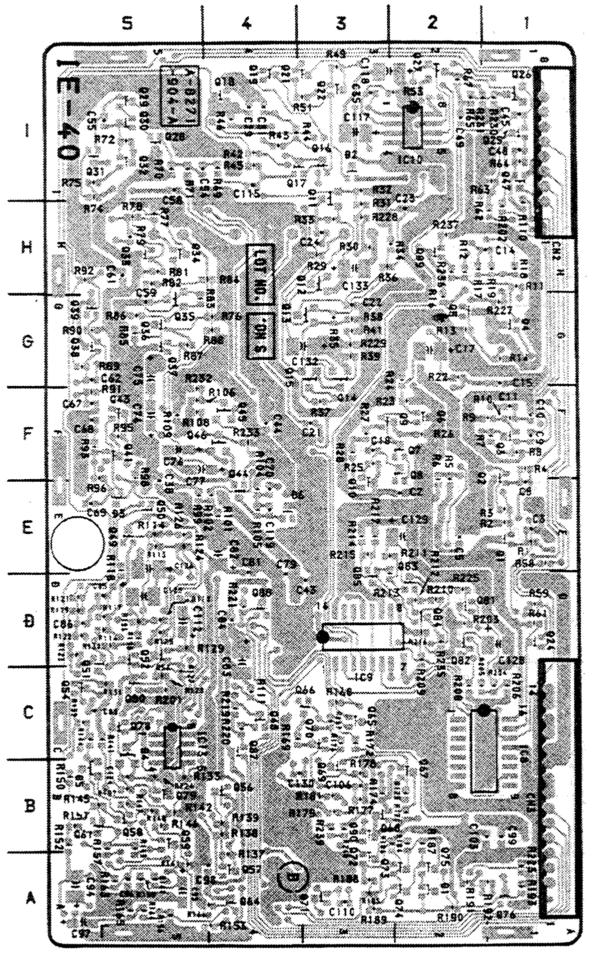
TP3



SERIAL No. 10001-10293 (UC)
30001-30281 (J)
40001-40481 (EK)

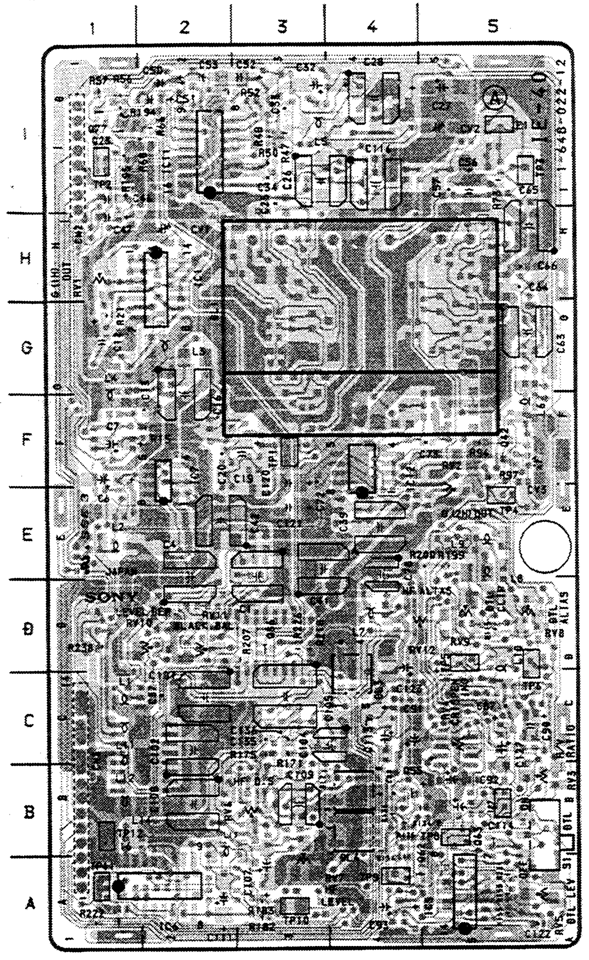


1-648-022-11 COMPONENT SIDE

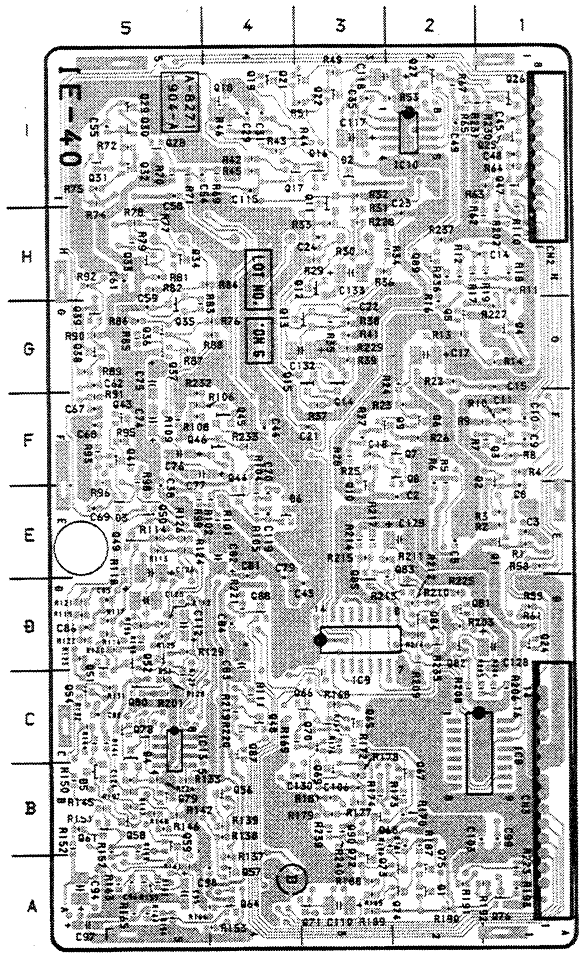


1-648-022-11 SOLDERING SIDE

SERIAL No. 10351 and higher (UC)
30301 and higher (J)
40501 and higher (EK)



1-648-022-12 COMPONENT SIDE



1-648-022-12 SOLDERING SIDE

IE-40(1-648-022-11)

*CN2	H-1
*CN3	B-1
CV1	H-2
CV2	I-5
CV3	E-5
*D1	A-2
*D2	I-3
*D3	E-5
*D4	C-5
*D5	B-5
*D6	E-4
DL1	G-2
DL2	B-3
DL3	C-4
DL4	A-4
E1	I-5
IC1	H-2
IC5	A-5
IC6	A-2
IC7	F-2
*IC8	C-1
*IC9	C-3
*IC10	I-2
IC11	I-2
IC12	F-4
*IC13	C-5
L2	E-1
L3	G-2
L4	G-1
L5	I-3
L6	F-5
L7	D-4
L8	D-5
L9	E-5
L10	D-5
L11	C-1
L12	B-1
L13	B-2
*Q1	E-1
*Q2	F-2
*Q3	F-1
*Q4	G-1
*Q5	G-2
*Q6	F-2
*Q7	F-2
*Q8	F-2
*Q9	F-2
*Q10	E-3
*Q11	I-3
*Q12	H-3
*Q13	G-4
*Q14	F-3
*Q15	G-4
*Q16	I-3
*Q17	I-4
*Q18	I-4
*Q19	I-4
*Q21	I-4
*Q22	I-3
Q23	I-1
*Q24	D-1
*Q25	I-1
*Q26	I-1
*Q27	I-2
*Q28	I-5
*Q29	I-5
*Q30	I-5
*Q31	I-5
*Q32	I-5
*Q33	H-5
*Q34	H-5
*Q35	G-5
*Q36	G-5
*Q37	G-5
*Q38	G-5
*Q39	G-5
*Q41	F-5
Q42	F-5
*Q43	F-5
*Q44	F-4
*Q45	F-4
*Q46	F-5
*Q47	I-1
*Q48	C-4
*Q49	E-5
*Q50	E-5
*Q51	D-5
*Q52	D-5
*Q53	C-5
*Q54	C-5
Q55	B-4
*Q56	B-4
*Q57	A-4
*Q58	B-5
*Q59	B-5
*Q61	B-5
Q62	A-4
Q63	B-5
*Q64	A-4
*Q65	C-3
*Q66	C-3
*Q67	B-2
*Q68	B-3
*Q69	B-3
*Q70	C-3
*Q71	A-3
*Q72	A-3
*Q73	A-3
*Q74	A-2
*Q75	A-2
*Q76	A-1
Q77	I-1
*Q78	C-5
*Q79	B-5
*Q80	C-5
*Q81	D-2
*Q82	D-2
*Q83	E-2
*Q84	D-2
*Q85	D-3
Q86	D-3
*Q87	C-4
*Q88	D-4
*Q89	H-2
*Q90	B-3
RV1	H-1
RV2	F-5
RV3	B-5
RV4	C-5
RV5	A-5
RV6	B-2
RV7	A-4
RV8	D-5
RV9	D-5
RV10	D-2
RV11	D-2
RV12	D-4
S1	A-5
TP1	F-3
TP2	I-1
TP3	I-5
TP4	E-5
TP5	D-5
TP6	C-5
TP7	B-5
TP8	B-5
TP9	A-4
TP10	A-3
TP11	A-1
TP12	B-1

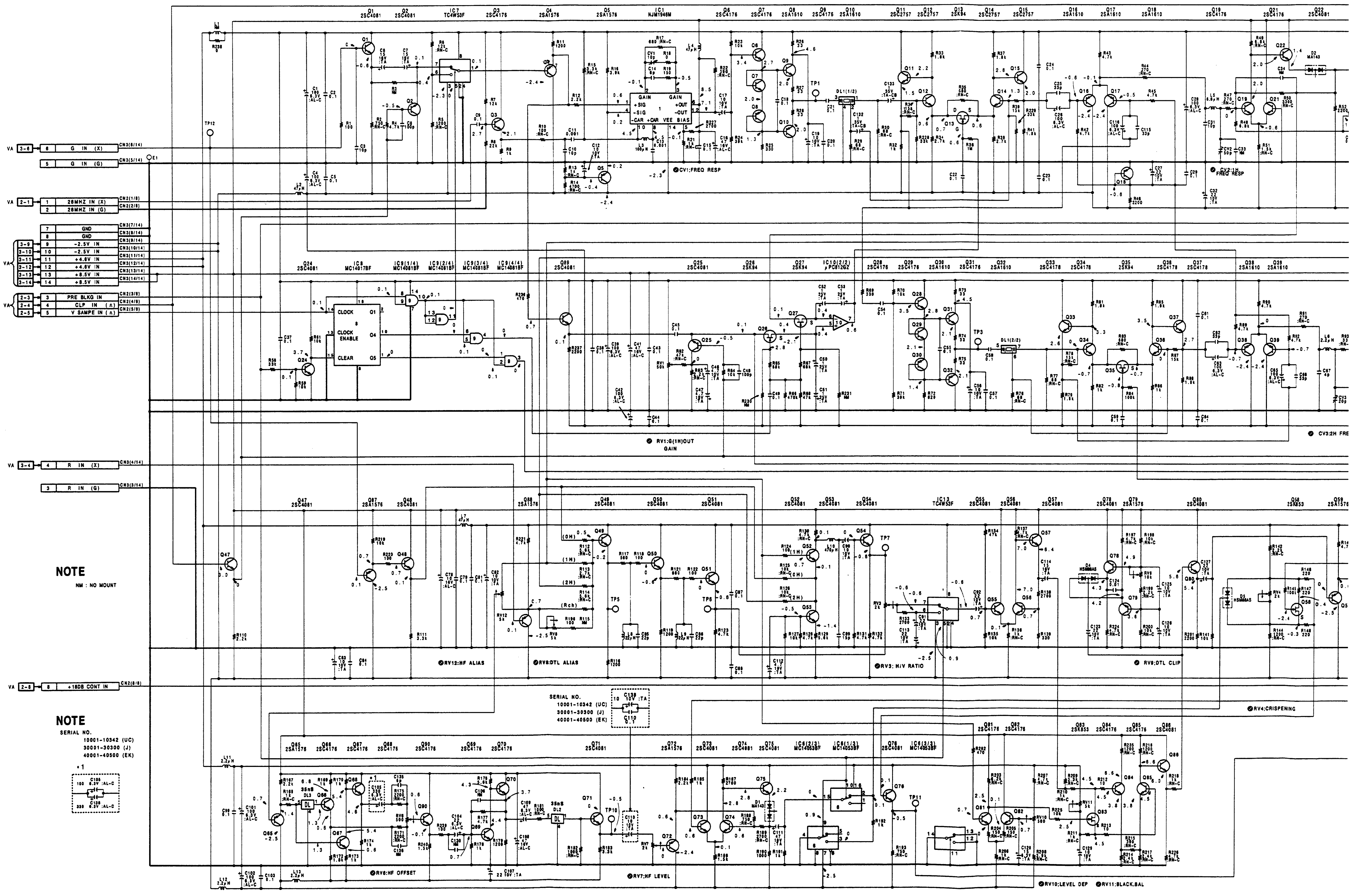
*;SOLDERING SIDE

IE-40(1-648-022-12)

*CN2	H-1
*CN3	B-1
CV1	H-2
CV2	I-5
CV3	E-5
*D1	A-2
*D2	I-3
*D3	E-5
*D4	C-5
*D5	B-5
*D6	E-4
DL1	G-2
DL2	B-3
DL3	C-4
DL4	A-4
E1	I-5
IC1	H-2
IC5	A-5
IC6	A-2
IC7	F-2
*IC8	C-1
*IC9	C-3
*IC10	I-2
IC11	I-2
IC12	F-4
*IC13	C-5
L2	E-1
L3	G-2
L4	G-1
L5	I-3
L6	F-5
L7	D-4
L8	D-5
L9	E-5
L10	D-5
L11	C-1
L12	B-1
L13	B-2
*Q1	E-1
*Q2	F-2
*Q3	F-1
*Q4	G-1
*Q5	G-2
*Q6	F-2
*Q7	F-2
*Q8	F-2
*Q9	F-2
*Q10	E-3
*Q11	I-3
*Q12	H-3
*Q13	G-4
*Q14	F-3
*Q15	G-4
*Q16	I-3
*Q17	I-4
*Q18	I-4
*Q19	I-4
*Q21	I-4
*Q22	I-3
Q23	I-1
*Q24	D-1
*Q25	I-1
*Q26	I-1
*Q27	I-2
*Q28	I-5
*Q29	I-5
*Q30	I-5
*Q31	I-5
*Q32	I-5
*Q33	H-5
*Q34	H-5
*Q35	G-5
*Q36	G-5
*Q37	G-5
*Q38	G-5
*Q39	G-5
*Q41	F-5
Q42	F-5
*Q43	F-5
*Q44	F-4
*Q45	F-4
*Q46	F-5
*Q47	I-1
*Q48	C-4
*Q49	E-5
*Q50	E-5
*Q51	D-5
*Q52	D-5
*Q53	C-5
*Q54	C-5
Q55	B-4
*Q56	B-4
*Q57	A-4
*Q58	B-5
*Q59	B-5
*Q61	B-5
Q62	A-4
Q63	B-5
*Q64	A-4
*Q65	C-3
*Q66	C-3
*Q67	B-2
*Q68	B-3
*Q69	B-3
*Q70	C-3
*Q71	A-3
*Q72	A-3
*Q73	A-3
*Q74	A-2
*Q75	A-2
*Q76	A-1
Q77	I-1
*Q78	C-5
*Q79	B-5
*Q80	C-5
*Q81	D-2
*Q82	D-2
*Q83	E-2
*Q84	D-2
*Q85	D-3
Q86	D-3
*Q87	C-4
*Q88	D-4
*Q89	H-2
*Q90	B-3
RV1	H-1
RV2	F-5
RV3	B-5
RV4	C-5
RV5	A-5
RV6	B-2
RV7	A-4
RV8	D-5
RV9	D-5
RV10	D-2
RV11	D-2
RV12	D-4
S1	A-5
TP1	F-3
TP2	I-1
TP3	I-5
TP4	E-5
TP5	D-5
TP6	C-5
TP7	B-5
TP8	B-5
TP9	A-4
TP10	A-3
TP11	A-1
TP12	B-1

*;SOLDERING SIDE

IE-40 BOARD


VA 3-6 6 G IN (X) CN3(6/14)
5 G IN (G) CN3(5/14)
VA 2-1 1 28MHZ IN (X) CN2(1/8)
2 28MHZ IN (G) CN2(2/8)
7 GND CN3(7/14)
8 GND CN3(8/14)
3-9 9 -2.5V IN CN3(9/14)
3-10 10 -2.5V IN CN3(10/14)
3-11 11 +4.8V IN CN3(11/14)
3-12 12 +4.8V IN CN3(12/14)
3-13 13 +8.5V IN CN3(13/14)
3-14 14 +8.5V IN CN3(14/14)
2-3 3 PRE BLKG IN CN2(3/8)
2-4 4 CLP IN (n) CN2(4/8)
2-5 5 V SAMPE IN (n) CN2(5/8)
VA 3-4 4 R IN (X) CN3(4/14)
3 R IN (G) CN3(3/14)
VA 2-8 8 +18DB CONT IN CN2(8/8)
CV1:FREQ RESP
CV2:H FREQ RESP
CV3:H FRE
RV1:G(1H)OUT GAIN
RV12:HF ALIAS
RV8:DTL ALIAS
RV3:H/V RATIO
RV9:DTL CLIP
RV4:CRISPENING
RV6:HF OFFSET
RV7:HF LEVEL
RV10:LEVEL DEP
RV11:BLACK.BAL
IC1 NJM1946M
IC7 TC4W53F
IC8 MC14017BF
IC9 MC14081BF
IC10 μPC812GZ
IC13 TC4W53F
DL1(1/2)
DL1(2/2)
DL2
DL3
TP1
TP3
TP5
TP6
TP7
TP10
TP11
TP12

SERIAL NO.
10001-10342 (UC)
30001-30300 (J)
40001-40500 (EK)

C138 10 10V :TA
C110 0.1

NOTE

NM : NO MOUNT

NOTE

SERIAL NO.
10001-10342 (UC)
30001-30300 (J)
40001-40500 (EK)

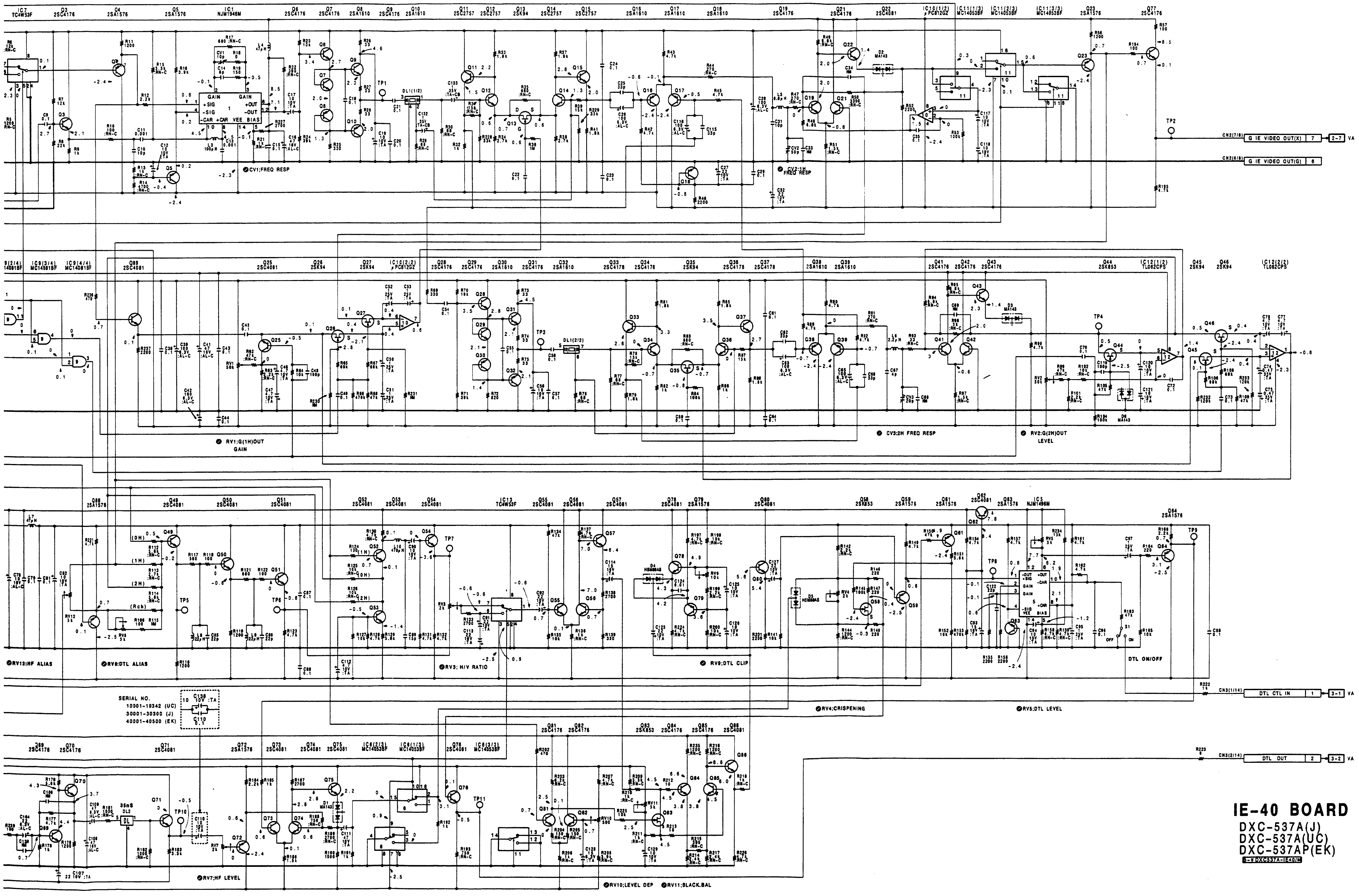
*1

C105 100 6.3V :AL-C
C136 330 6.3V :AL-C

DXC-537A (J,UC)
DXC-537AP(EK)

C-11 C-11

A B C D E F G H


G IE VIDEO OUT(X)
G IE VIDEO OUT(G)
DTL CTL IN
DTL OUT
CV1;FREQ RESP
CV2;1H FREQ RESP
CV3;2H FREQ RESP
RV1;G(1H)OUT GAIN
RV2;G(2H)OUT LEVEL
RV12;HF ALIAS
RV6;DTL ALIAS
RV3;H/V RATIO
RV9;DTL CLIP
RV4;CRISPENING
RV5;DTL LEVEL
DTL ON/OFF
RV7;HF LEVEL
RV10;LEVEL DEP
RV11;BLACK.BAL
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11

SERIAL NO.
10001-10342 (UC)
30001-30300 (J)
40001-40500 (EK)

IE-40 BOARD
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

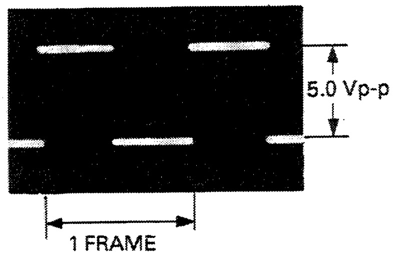
SG-171 Board

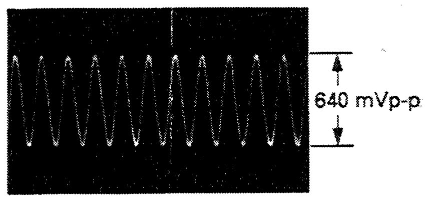
注意：
1. DC電圧はデジタル電圧計による値。
2. 波形写真、及びDC電圧は下記条件での測定。

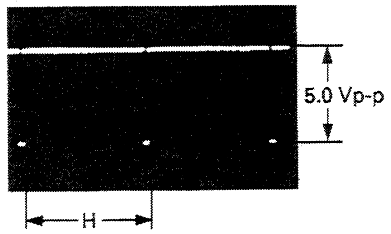
- 本機にCA-537を接続する。
- SWITCH POSITION
  - OUTPUT : BARS
  - GAIN : 0dB
  - WHITE BAL : PRESET
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

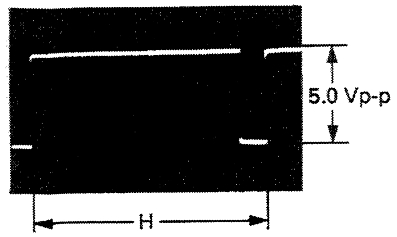
NOTE:
1. All voltage are DC mesured with a digital voltmeter.
2. All waveforms are taken and DC voltage is mesured in condition below.

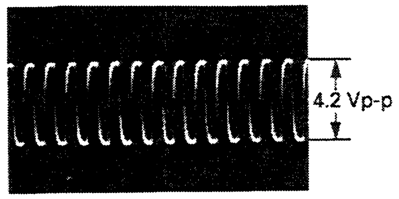
- Connect the camera adapter CA-537/537P to the camera.
- SWITCH POSITION
  - OUTPUT : BARS
  - GAIN : 0dB
  - WHITE BAL : PRESET
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

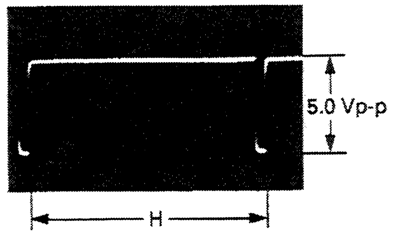

CN1-1pin
FLD

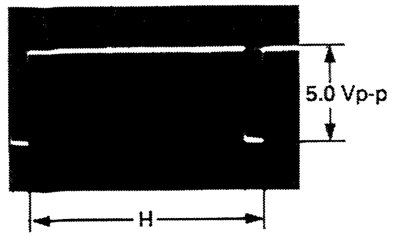

CN2-8pin
14MHz

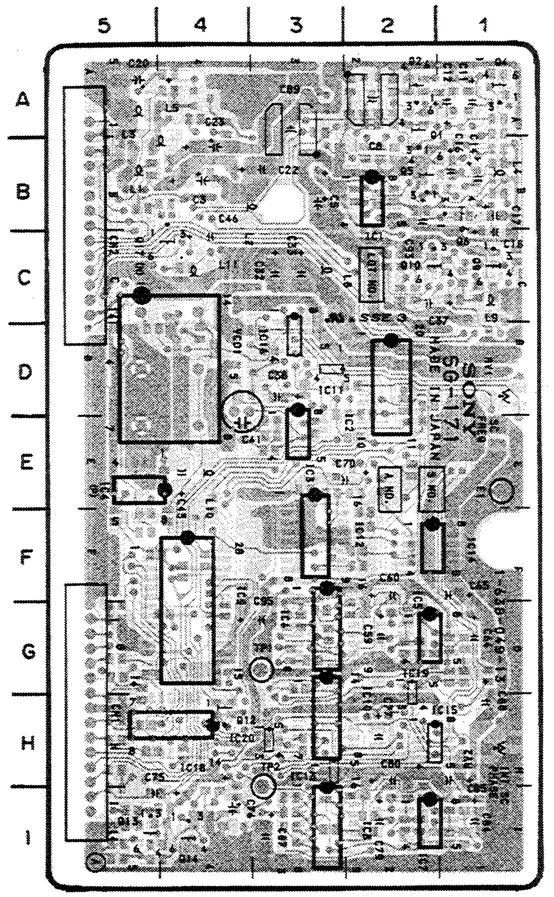

CN1-12pin
VD

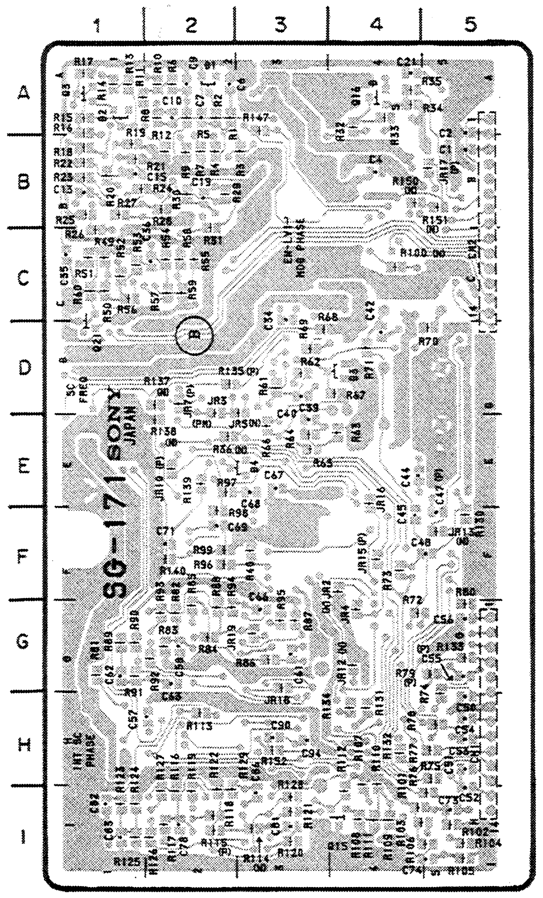

CN1-13pin
HD


CN1-6pin
SC


CN1-8pin
BF


CN1-9pin
SYNC


1-638-049-13 COMPONENT SIDE

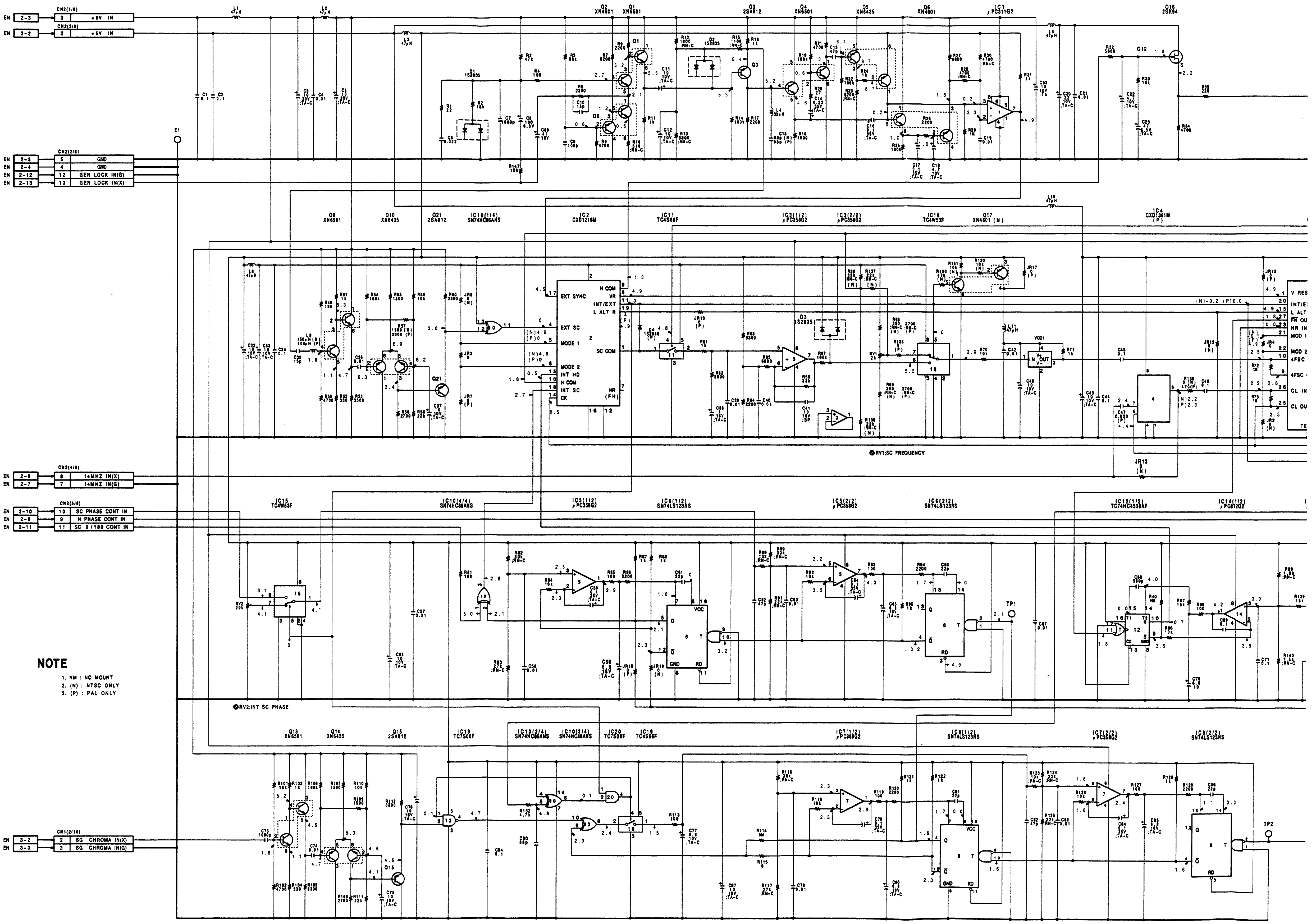

1-638-049-13 SOLDERING SIDE

SG-171(1-638-049-13)

CN1	H-5	IC11	D-3	Q1	A-2	TP2	H-3
CN2	C-5	IC12	F-2	Q2	A-2		
		IC13	H-3	*Q3	A-1	VCO1	D-4
*D1	A-2	IC14	F-1	Q4	A-1		
*D2	A-1	IC15	H-1	Q5	B-2		
*D3	D-4	IC16	D-3	Q6	C-1		
*D4	E-3	IC18	H-4	Q9	C-1		
		IC19	G-2	Q10	C-2		
E1	E-1	IC20	H-4	Q12	H-4		
				Q13	I-5		
IC1	C-2	L1	B-5	Q14	I-4		
IC2	E-2	L2	C-3	*Q15	I-4		
IC3	E-3	L3	A-5	*Q16	A-4		
IC4	E-5	L4	B-1	Q17	C-5		
IC5	F-2	L5	A-4	*Q21	D-1		
IC6	G-3	L8	C-2				
IC7	I-2	L9	C-1	RV1	D-1		
IC8	I-2	L10	E-4	RV2	H-1		
IC9	F-4	L11	C-4				
IC10	H-2			TP1	G-3		

*;SOLDERING SIDE

SG-171 BOARD


CN2(1/8)
+9V IN
CN2(3/8)
+5V IN
CN2(2/8)
GND
GND
GEN LOCK IN(G)
GEN LOCK IN(X)
CN2(4/8)
14MHZ IN(X)
14MHZ IN(G)
CN2(5/8)
SC PHASE CONT IN
H PHASE CONT IN
SC 0/180 CONT IN
CN1(2/10)
SG CHROMA IN(X)
SG CHROMA IN(G)
EN
E1
Q2 XN4601
Q1 XN6501
Q3 2SA812
Q4 XN6501
Q5 XN6435
Q6 XN4601
IC1 μPC311G2
Q16 2SK94
Q9 XN6501
Q10 XN6435
Q21 2SA812
IC10(1/4) SN74HC86ANS
IC2 CXD1216M
IC11 TC4S66F
IC3(1/2) μPC358G2
IC3(2/2) μPC358G2
IC16 TC4W53F
Q17 XN4601 (N)
IC4 CXD1361M (P)
EXT SYNC
H COM
VR
INT/EXT
L ALT R
EXT SC
MODE 1
SC COM
MODE 2
INT HD
H COM
INT SC
CK
HR
(FH)
V RES
INT/E
L ALT
FR OUT
HR IN
MOD 1
MOD 2
4FSC
4FSC
CL IN
CL OU
TE
VCO1
IN OUT
●RV1:SC FREQUENCY
IC15 TC4W53F
IC10(4/4) SN74HC86ANS
IC5(1/2) μPC358G2
IC6(1/2) SN74LS123NS
IC5(2/2) μPC358G2
IC6(2/2) SN74LS123NS
IC12(1/2) TC74HC4538AF
IC14(1/2) μPC812G2
TP1
●RV2:INT SC PHASE
Q13 XN6501
Q14 XN6435
Q15 2SA812
IC13 TC7S00F
IC10(2/4) SN74HC86ANS
IC10(3/4) SN74HC86ANS
IC20 TC7S08F
IC18 TC4S66F
IC7(1/2) μPC358G2
IC8(1/2) SN74LS123NS
IC7(2/2) μPC358G2
IC8(2/2) SN74LS123NS
TP2
VCC
GND
RD

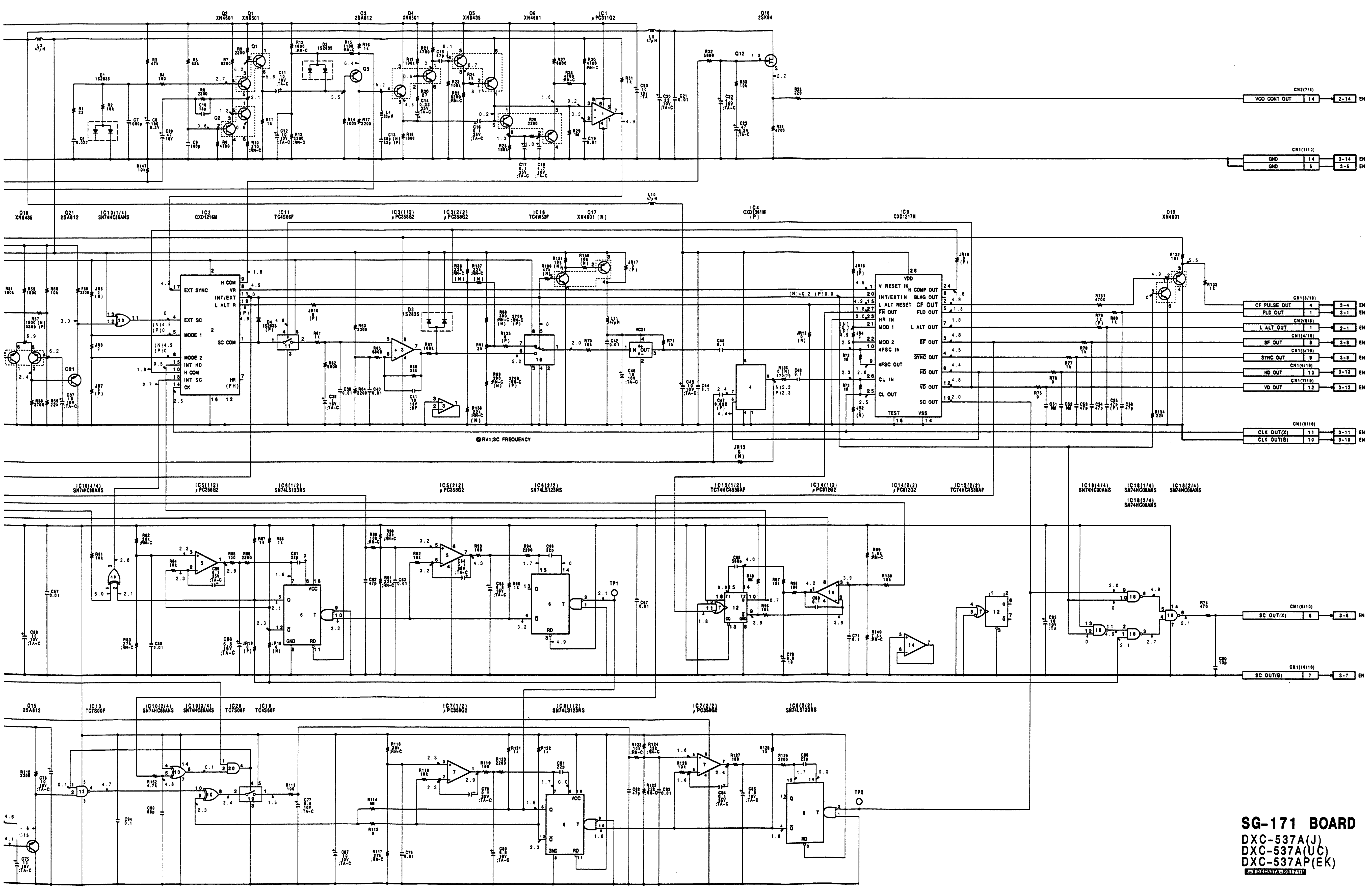
NOTE

1. NM : NO MOUNT
2. (N) : NTSC ONLY
3. (P) : PAL ONLY

DXC-537A (J,UC)
DXC-537AP(EK)

C-13 C-13

A | B | C | D | E | F | G | H |


Q2 XN4601
Q1 XN6501
Q3 2SA812
Q4 XN6501
Q5 XN6435
Q6 XN4601
IC1 μPC311G2
Q16 2SK94
Q12
Q10 XN6435
Q21 2SA812
IC10(1/4) SN74HC86ANS
IC2 CXD1216M
IC11 TC4S66F
IC3(1/2) μPC358G2
IC3(2/2) μPC358G2
IC16 TC4W53F
Q17 XN4601 (N)
IC4 CXD1361M (P)
IC9 CXD1217M
Q12 XN4601
EXT SYNC
H COM
VR
INT/EXT
L ALT R
EXT SC
MODE 1
SC COM
MODE 2
INT HD
H COM
INT SC
CK
HR (FH)
VCO1
V RESET IN
INT/EXT IN
L ALT RESET
FH OUT
HR IN
MOD 1
MOD 2
4FSC IN
4FSC OUT
CL IN
CL OUT
TEST
VSS
VDD
H COMP OUT
BLKG OUT
CF OUT
FLD OUT
L ALT OUT
BF OUT
SYNC OUT
HD OUT
VD OUT
SC OUT
RV1;SC FREQUENCY
CN2(7/8)
VCO CONT OUT 14 2-14 EN
CN1(1/10)
GND 14 3-14 EN
GND 5 3-5 EN
CN1(3/10)
CF PULSE OUT 4 3-4 EN
FLD OUT 1 3-1 EN
CN2(8/8)
L ALT OUT 1 2-1 EN
CN1(4/10)
BF OUT 8 3-8 EN
CN1(5/10)
SYNC OUT 9 3-9 EN
CN1(6/10)
HD OUT 13 3-13 EN
CN1(7/10)
VD OUT 12 3-12 EN
CN1(9/10)
CLK OUT(X) 11 3-11 EN
CLK OUT(G) 10 3-10 EN
IC10(4/4) SN74HC86ANS
IC5(1/2) μPC358G2
IC6(1/2) SN74LS123NS
IC5(2/2) μPC358G2
IC6(2/2) SN74LS123NS
IC12(1/2) TC74HC4538AF
IC14(1/2) μPC812G2
IC14(2/2) μPC812G2
IC12(2/2) TC74HC4538AF
IC18(4/4) SN74HC00ANS
IC18(1/4) SN74HC00ANS
IC18(2/4) SN74HC00ANS
IC18(3/4) SN74HC00ANS
TP1
CN1(8/10)
SC OUT(X) 6 3-6 EN
CN1(10/10)
SC OUT(G) 7 3-7 EN
Q15 2SA812
IC13 TC7S00F
IC10(2/4) SN74HC86ANS
IC10(3/4) SN74HC86ANS
IC20 TC7S08F
IC19 TC4S66F
IC7(1/2) μPC358G2
IC8(1/2) SN74LS123NS
IC7(2/2) μPC358G2
IC8(2/2) SN74LS123NS
TP2
1
2
3
4
5
C-13
C-13
E
F
G
H
I
J
K
L

SG-171 BOARD

DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)
B-1 DXC537A-SG171 1/M

EN-95A Board

注意：

1. DC電圧はデジタル電圧計による値。
2. 波形写真、及びDC電圧は下記条件での測定。

- 本機にCA-537を接続する。
- SWITCH POSITION
  - OUTPUT : BARS
  - GAIN : 0dB
  - WHITE BAL : PRESET
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

3. *はUCモデルの波形です。Jモデルのものは、セットアップレベルがゼロになっています。

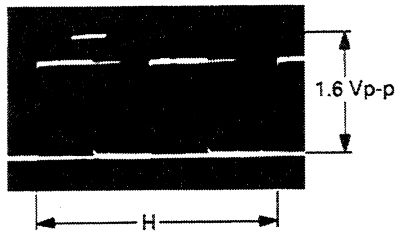
NOTE:

1. All voltage are DC mesured with a digital voltmeter.
2. All waveforms are taken and DC voltage is mesured in condition below.

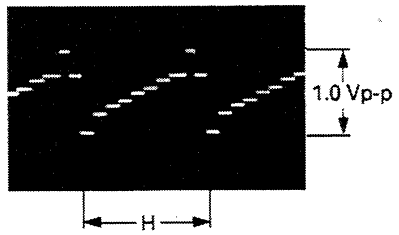
- Connect the camera adapter CA-537/537P to the camera.
- SWITCH POSITION
  - OUTPUT : BARS
  - GAIN : 0dB
  - WHITE BAL : PRESET
  - SHUTTER : OFF
  - ZEBRA MARKER : OFF
  - PHASE : 0°
  - CLOCK : OFF
  - EVS : OFF
  - TURBO GAIN : OFF
  - MATRIX : OFF
  - ATW : OFF
  - A IRIS MODE : STD

3. The waveform marked with * is for UC model. For J model, the setup level is set to "0" at factory.

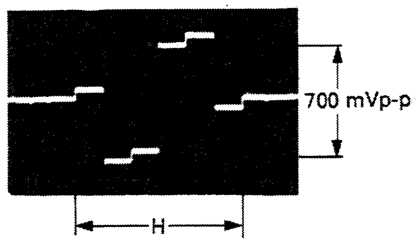
Q39-2pin NTSC
R



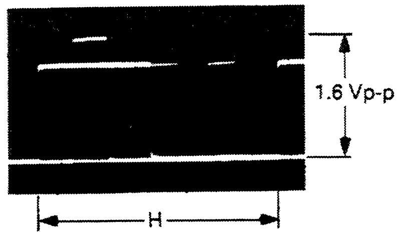
Q39-2pin PAL
R



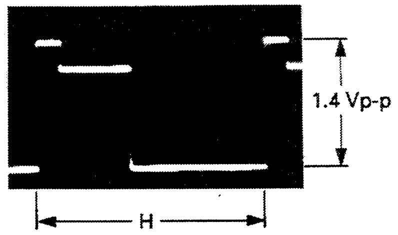
IC1-1pin NTSC
(R-Y)



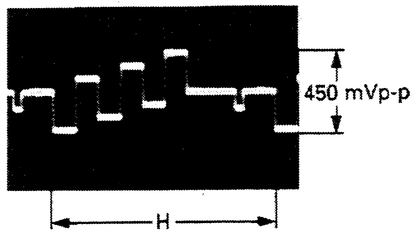
Q43-2pin NTSC
G



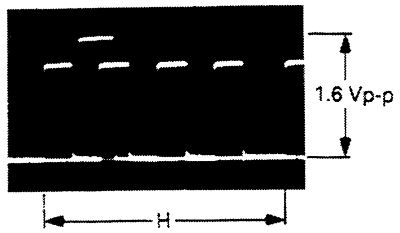
Q43-2pin PAL
G



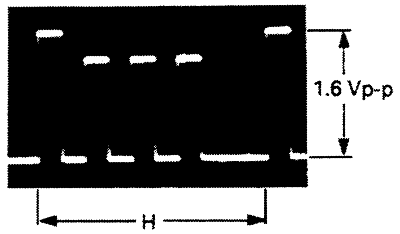
IC1-4pin NTSC
(B-Y)



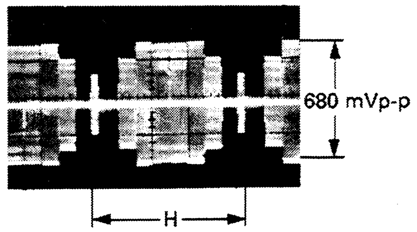
Q35-4pin NTSC
B



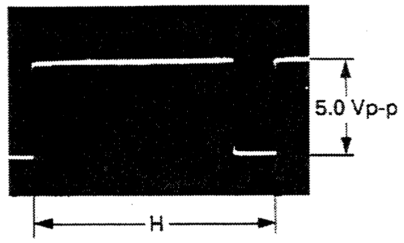
Q35-4pin PAL
B



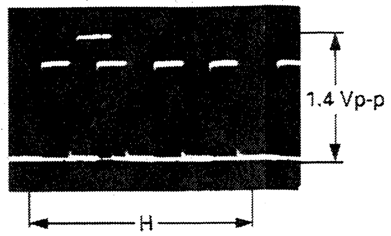
CN1-A11pin NTSC
CHROMA



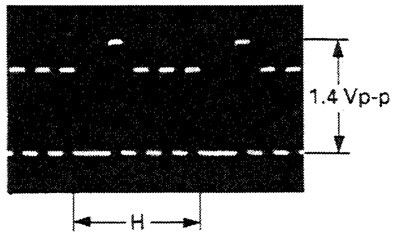
CN1-B12pin
BLKG



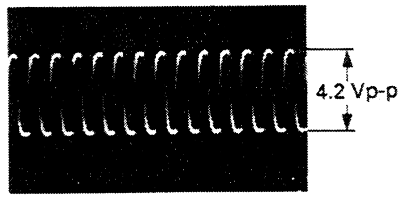
CN1-A5pin NTSC
B VIDEO



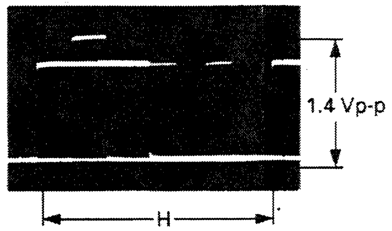
CN1-A5pin PAL
B VIDEO



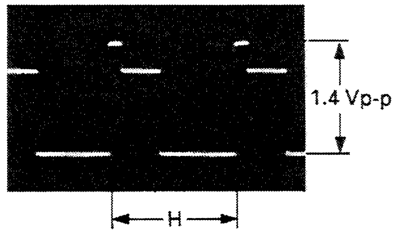
CN3-6pin
SC



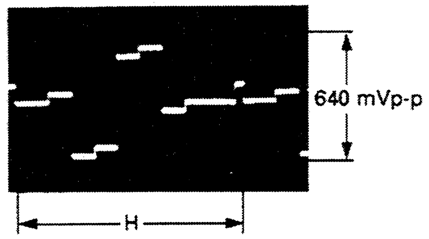
CN1-A6pin NTSC
G VIDEO



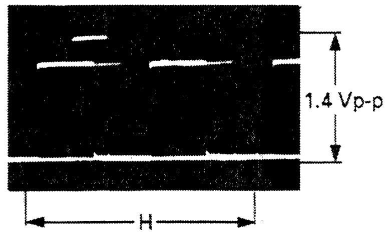
CN1-A6 PAL
G VIDEO



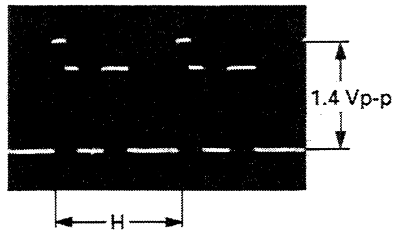
IC1-1pin PAL
(R-Y)



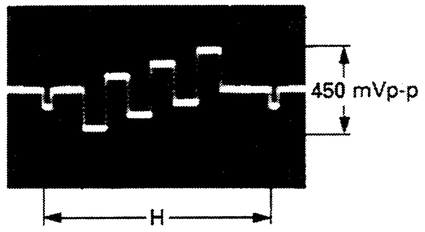
CN1-A7pin NTSC
R VIDEO



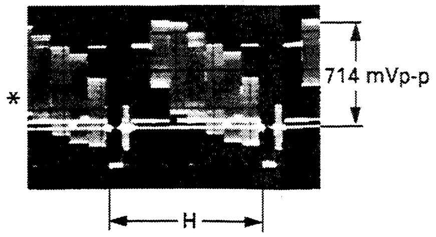
CN1-A7 PAL
R VIDEO



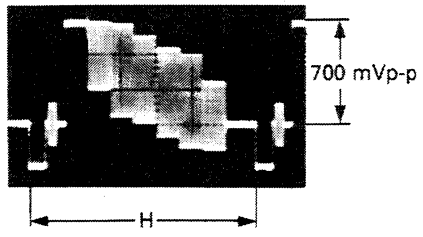
IC1-4pin PAL
(B-Y)



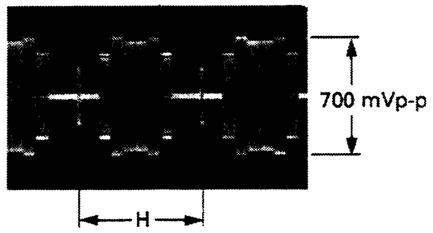
CN1-A14pin NTSC
VBS VIDEO



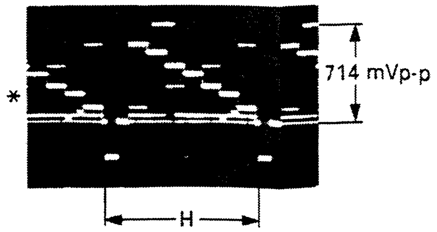
CN1-A14pin PAL
VBS VIDEO



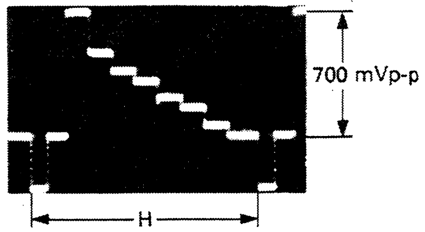
CN1-A11pin PAL
CHROMA

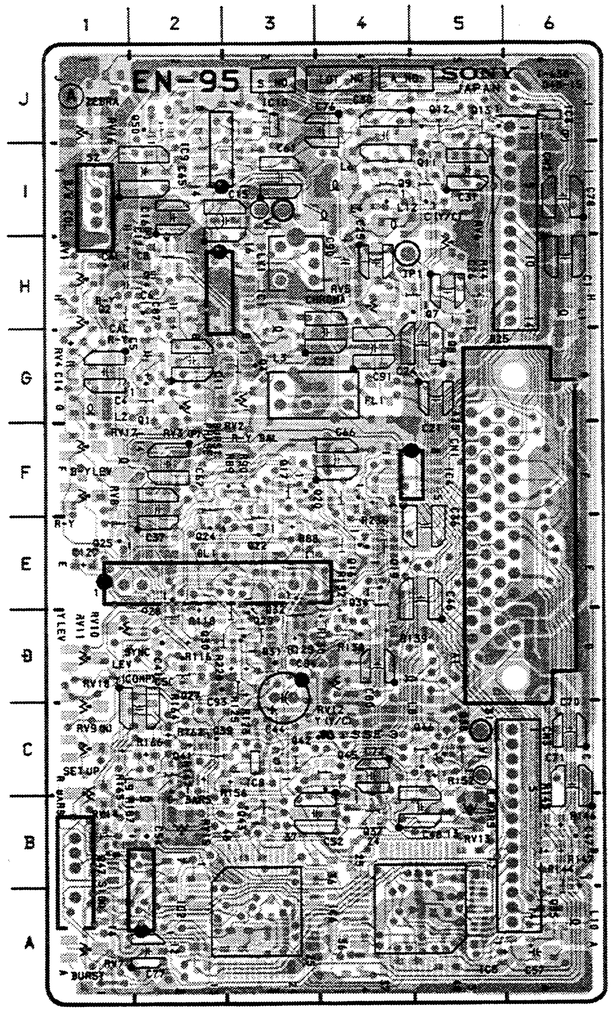


CN1-A9pin NTSC
Y

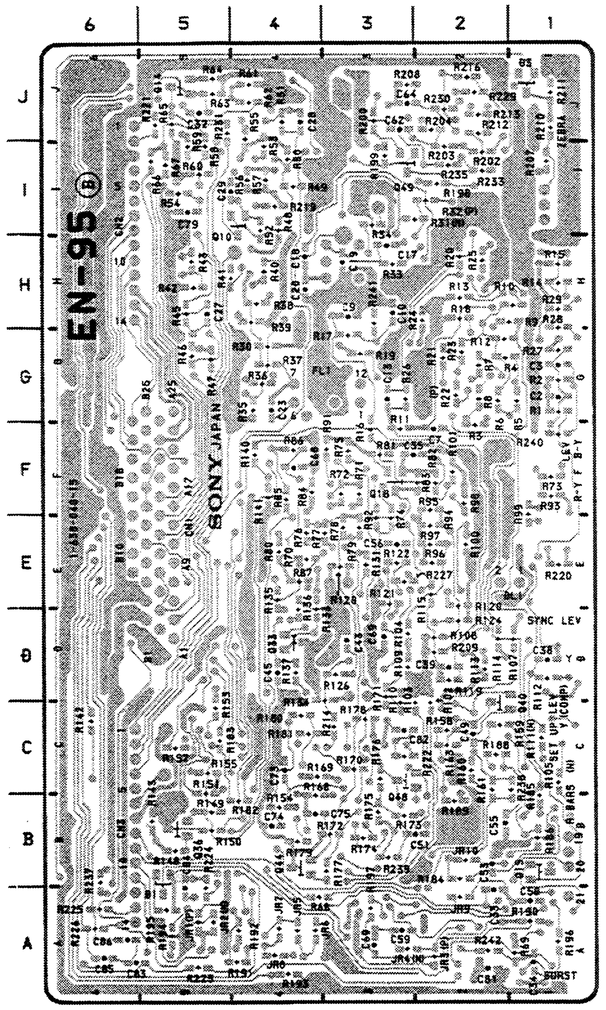


CN1-A9pin PAL
Y





1-638-048-15 COMPONENT SIDE



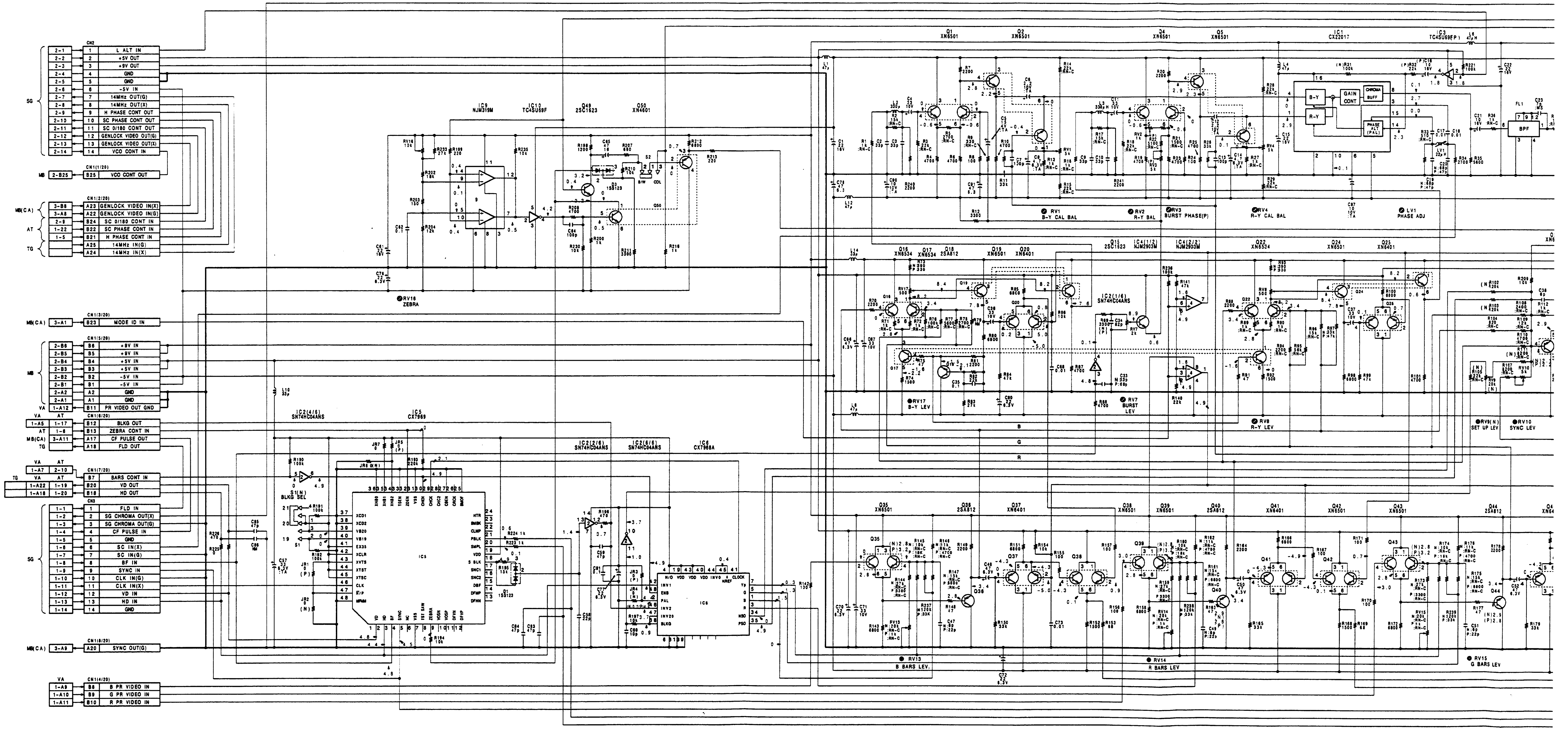
1-638-048-15 SOLDERING SIDE

EN-95A(1-648-048-11)

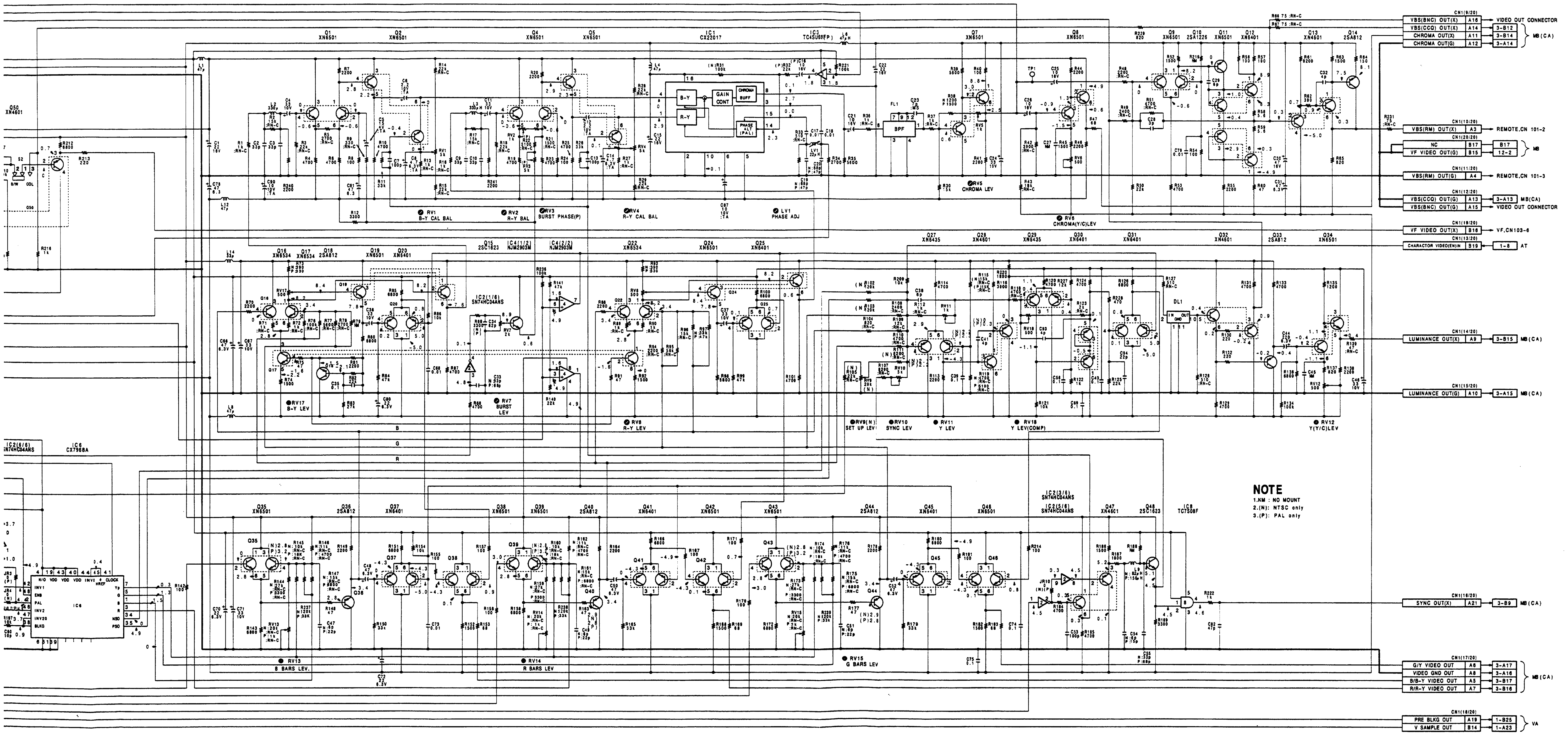
CN1	F-5
*D1	A-5
*D3	J-1
DL1	E-2
FL1	G-1
IC1	H-3
IC2	A-2
IC4	F-5
IC5	A-5
IC6	A-4
IC8	C-3
IC9	I-2
IC10	J-3
LV1	H-3
L1	H-6
L2	G-1
L3	G-3
L4	I-4
L6	I-4
L8	C-5
L9	C-2
L10	A-6
L12	I-4
L14	F-2
Q1	G-2
Q2	H-1
Q4	G-3
Q5	H-2
Q7	H-5
Q8	G-5
Q9	I-4
*Q10	I-5
Q11	I-5
Q12	J-5
Q13	J-5
*Q14	J-5
*Q15	B-1
Q16	E-4
Q17	F-3
*Q18	F-3
Q19	E-4
Q20	F-4
Q22	E-3
Q24	E-2
Q25	E-1
Q27	D-2
Q28	D-2
Q29	D-3
Q30	D-2
Q31	D-3
Q32	D-3
*Q33	D-4
Q34	E-4
Q35	A-6
*Q36	B-5
Q37	B-4
Q38	C-5
Q39	C-2
*Q40	C-1
Q41	C-2
Q42	C-3
Q43	B-3
*Q44	B-4
Q45	C-4
Q46	C-5
Q47	B-1
*Q48	B-3
*Q49	I-3
Q50	J-2
RV1	H-1
RV2	F-3
RV4	G-1
RV5	H-4
RV6	I-5
RV7	A-1
RV8	F-1
RV9	C-1
RV10	D-1
RV11	D-1
RV12	C-4
RV13	B-5
RV14	B-1
RV15	B-2
RV16	J-1
RV17	F-1
RV18	D-1
S1	B-1
S2	I-1
TP1	H-4

*;SOLDERING SIDE

EN-95A BOARD


SG
2-1 CN2 1 L ALT IN
2-2 2 +5V OUT
2-3 3 +9V OUT
2-4 4 GND
2-5 5 GND
2-6 6 -5V IN
2-7 7 14MHz OUT(G)
2-8 8 14MHz OUT(X)
2-9 9 H PHASE CONT OUT
2-10 10 SC PHASE CONT OUT
2-11 11 SC 0/180 CONT OUT
2-12 12 GENLOCK VIDEO OUT(G)
2-13 13 GENLOCK VIDEO OUT(X)
2-14 14 VCO CONT IN
MB 2-B25 CN1(1/20) B25 VCO CONT OUT
MB(CA) 3-B8 CN1(2/20) A23 GENLOCK VIDEO IN(X)
3-A8 A22 GENLOCK VIDEO IN(G)
AT 2-9 B24 SC 0/180 CONT IN
1-22 B22 SC PHASE CONT IN
1-5 B21 H PHASE CONT IN
TG A25 14MHz IN(G)
A24 14MHz IN(X)
MB(CA) 3-A1 CN1(3/20) B23 MODE ID IN
MB 2-B6 CN1(5/20) B6 +9V IN
2-B5 B5 +9V IN
2-B4 B4 +5V IN
2-B3 B3 +5V IN
2-B2 B2 -5V IN
2-B1 B1 -5V IN
2-A2 A2 GND
2-A1 A1 GND
VA 1-A12 B11 PR VIDEO OUT GND
VA AT
1-A5 1-17 CN1(6/20) B12 BLKG OUT
AT 1-6 B13 ZEBRA CONT IN
MB(CA) 3-A11 A17 CF PULSE OUT
TG A18 FLD OUT
VA AT
1-A7 2-10 CN1(7/20) B7 BARS CONT IN
TG VA AT
1-A22 1-19 B20 VD OUT
1-A18 1-20 B18 HD OUT
SG
1-1 CN3 1 FLD IN
1-2 2 SG CHROMA OUT(X)
1-3 3 SG CHROMA OUT(G)
1-4 4 CF PULSE IN
1-5 5 GND
1-6 6 SC IN(X)
1-7 7 SC IN(G)
1-8 8 BF IN
1-9 9 SYNC IN
1-10 10 CLK IN(G)
1-11 11 CLK IN(X)
1-12 12 VD IN
1-13 13 HD IN
1-14 14 GND
MB(CA) 3-A9 CN1(8/20) A20 SYNC OUT(G)
VA
1-A9 CN1(4/20) B8 B PR VIDEO IN
1-A10 B9 G PR VIDEO IN
1-A11 B10 R PR VIDEO IN
IC9 NJM319M
IC10 TC4SU69F
Q49 2SC1623
Q50 XN4601
RV16 ZEBRA
S2 B/W COL
IC2(4/6) SN74HC04ANS
IC5 CX7969
S1(N) BLKG SEL
IC2(2/6) SN74HC04ANS
IC2(6/6) SN74HC04ANS
IC6 CX7968A
Q1 XN6501
Q2 XN6501
Q4 XN6501
Q5 XN6501
IC1 CX22017
IC3 TC4SU69F(P)
B-Y
R-Y
GAIN CONT
CHROMA BUFF
PHASE ALT (PAL)
BPF
FL1
RV1 B-Y CAL BAL
RV2 R-Y BAL
RV3 BURST PHASE(P)
RV4 R-Y CAL BAL
LV1 PHASE ADJ
Q16 XN6534
Q17 XN6534
Q18 2SA812
Q19 XN6501
Q20 XN6401
Q15 2SC1623
IC4(1/2) NJM2903M
IC4(2/2) NJM2903M
IC2(1/6) SN74HC04ANS
Q22 XN6534
Q24 XN6501
Q25 XN6401
RV17 B-Y LEV
RV7 BURST LEV
RV8 R-Y LEV
RV9(N) SET UP LEV
RV10 SYNC LEV
B
G
R
Q35 XN6501
Q36 2SA812
Q37 XN6401
Q38 XN6501
Q39 XN6501
Q40 2SA812
Q41 XN6401
Q42 XN6501
Q43 XN6501
Q44 2SA812
RV13 B BARS LEV.
RV14 R BARS LEV
RV15 G BARS LEV

DXC-537A (J,UC)
DXC-537AP(EK)


Q1 XN6501
Q2 XN6501
Q4 XN6501
Q5 XN6501
IC1 CX22017
IC3 TC4SU69F(P)
Q7 XN6501
Q8 XN6501
Q9 XN6501
Q10 2SA1226
Q11 XN6501
Q12 XN6401
Q13 XN4601
Q14 2SA812
Q50 XN4601
B-Y
R-Y
GAIN CONT
CHROMA BUFF
PHASE ALT (PAL)
BPF
FL1
DL1
RV1 B-Y CAL BAL
RV2 R-Y BAL
RV3 BURST PHASE(P)
RV4 R-Y CAL BAL
LV1 PHASE ADJ
RV5 CHROMA LEV
RV6 CHROMA(Y/C)LEV
Q15 2SC1623
IC4(1/2) NJM2903M
IC4(2/2) NJM2903M
IC2(1/6) SN74HC04ANS
Q16 XN6534
Q17 XN6534
Q18 2SA812
Q19 XN6501
Q20 XN6401
Q22 XN6534
Q24 XN6501
Q25 XN6401
Q27 XN6435
Q28 XN4601
Q29 XN6435
Q30 XN6401
Q31 XN6401
Q32 XN4601
Q33 2SA812
Q34 XN6501
RV17 B-Y LEV
RV7 BURST LEV
RV8 R-Y LEV
RV9(N) SET UP LEV
RV10 SYNC LEV
RV11 Y LEV
RV18 Y LEV(COMP)
RV12 Y(Y/C)LEV
IC2(6/6) SN74HC04ANS
IC6 CX7968A
Q35 XN6501
Q36 2SA812
Q37 XN6401
Q38 XN6501
Q39 XN6501
Q40 2SA812
Q41 XN6401
Q42 XN6501
Q43 XN6501
Q44 2SA812
Q45 XN6401
Q46 XN6501
IC2(3/6) SN74HC04ANS
IC2(5/6) SN74HC04ANS
Q47 XN4601
Q48 2SC1623
IC8 TC7S08F
RV13 B BARS LEV.
RV14 R BARS LEV
RV15 G BARS LEV
CN1(9/20)
VBS(BNC) OUT(X) A16 VIDEO OUT CONNECTOR
VBS(CCQ) OUT(X) A14 3-B12
CHROMA OUT(X) A11 3-B14
CHROMA OUT(G) A12 3-A14
MB(CA)
CN1(10/20)
VBS(RM) OUT(X) A3 REMOTE,CN 101-2
CN1(20/20)
NC B17 B17
VF VIDEO OUT(G) B15 12-2
MB
CN1(11/20)
VBS(RM) OUT(G) A4 REMOTE,CN 101-3
CN1(12/20)
VBS(CCQ) OUT(G) A13 3-A13 MB(CA)
VBS(BNC) OUT(G) A15 VIDEO OUT CONNECTOR
CN1(19/20)
VF VIDEO OUT(X) B16 VF,CN103-6
CN1(13/20)
CHARACTOR VIDEO(EN)IN B19 1-8 AT
CN1(14/20)
LUMINANCE OUT(X) A9 3-B15 MB(CA)
CN1(15/20)
LUMINANCE OUT(G) A10 3-A15 MB(CA)
CN1(16/20)
SYNC OUT(X) A21 3-B9 MB(CA)
CN1(17/20)
G/Y VIDEO OUT A6 3-A17
VIDEO GND OUT A8 3-A16
B/B-Y VIDEO OUT A5 3-B17
R/R-Y VIDEO OUT A7 3-B16
MB(CA)
CN1(18/20)
PRE BLKG OUT A19 1-B25
V SAMPLE OUT B14 1-A23
VA
B
G
R
1
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C-15
C-15
E
F
G
H
I
J
K
L

NOTE
1.NM : NO MOUNT
2.(N): NTSC only
3.(P): PAL only

EN-95A BOARD

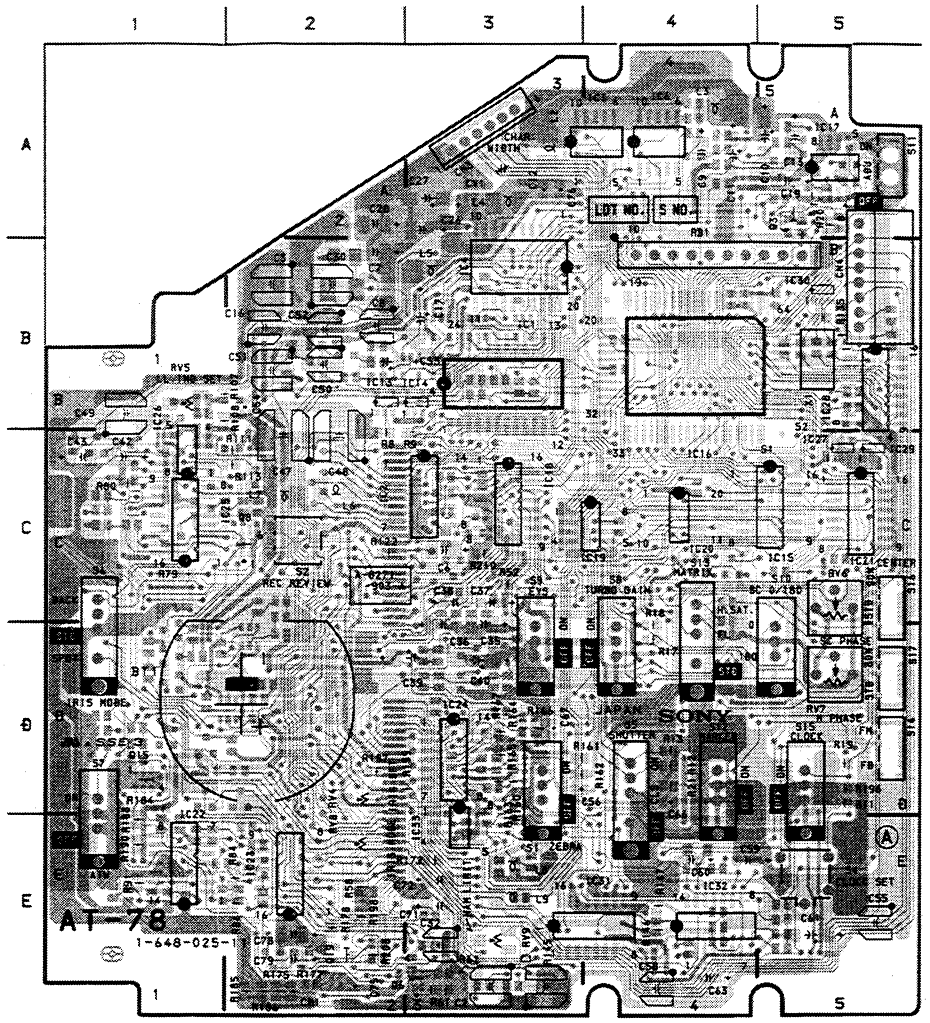
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)
8-YDXC537A-EN95A/M

AT-78 BOARD

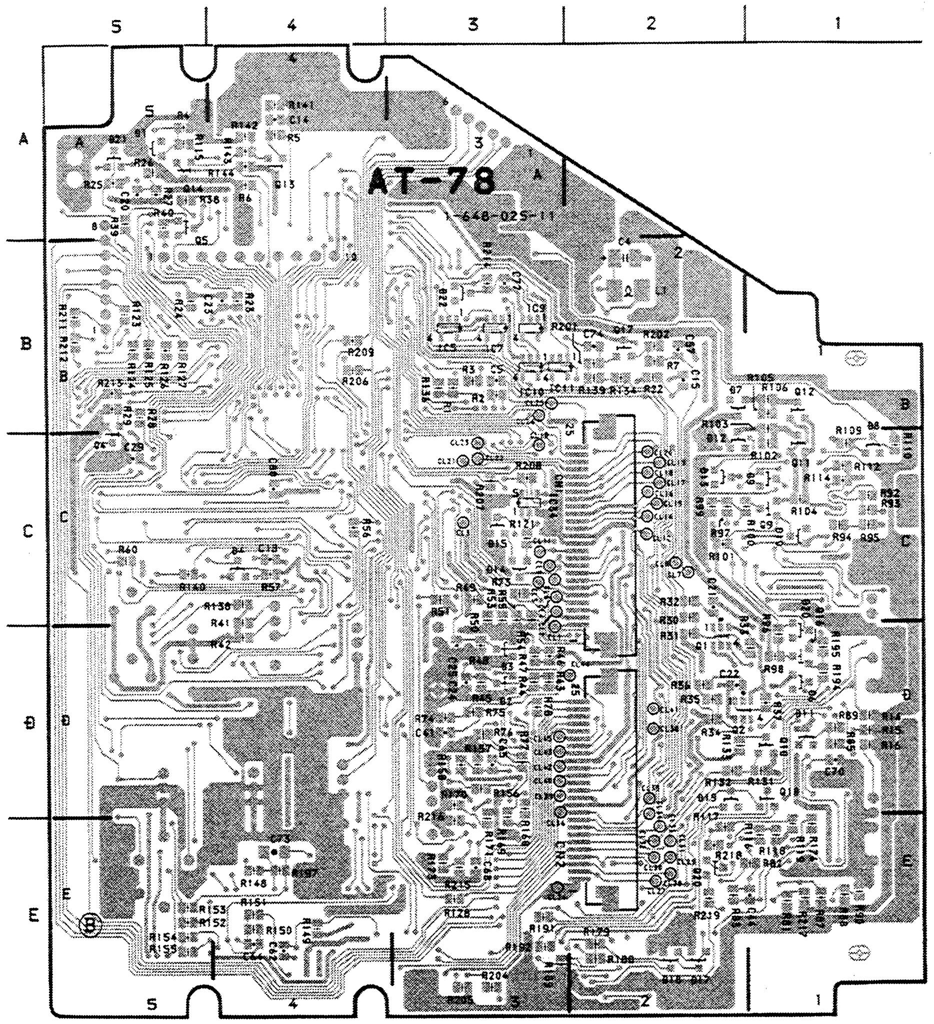
AT-78(1-648-025-11)

BT1	D-1	*L1	B-2
		L2	A-3
*CN1	C-3	L3	A-4
*CN2	E-3	L4	A-3
CN3	A-3	L5	B-3
CN4	B-5	L6	C-2
		L7	C-2
CV1	A-3	L8	E-3
		L9	E-3
*D1	A-5		
*D2	D-3	*Q1	D-2
*D3	D-3	*Q2	D-2
*D4	C-4	Q3	A-5
*D6	D-1	*Q4	C-5
*D7	B-2	*Q5	A-5
*D8	B-1	Q6	E-2
*D9	C-1	Q8	C-2
*D10	C-1	*Q9	C-1
*D11	D-1	*Q10	D-1
*D12	C-2	*Q11	C-1
*D13	C-2	*Q12	B-1
*D14	C-3	*Q13	A-4
*D15	C-3	*Q14	A-5
*D17	E-2	Q15	D-1
*D18	E-2	*Q16	C-1
*D19	D-2	*Q17	B-2
*D20	C-1	*Q18	D-1
*D21	A-5	Q19	E-2
*D22	B-3	*Q20	E-2
IC1	B-3	RB1	A-4
IC2	C-2		
IC3	A-4	RV4	D-2
IC4	B-3	RV5	B-1
*IC5	B-3	RV6	C-5
IC6	A-4	RV7	D-5
*IC7	B-3	RV8	E-2
*IC9	B-3	RV9	E-3
*IC10	B-3		
*IC11	B-3	S1	E-3
IC13	B-2	S2	C-2
IC14	B-3		
IC15	C-5	S4	E-4
IC16	C-4	S5	D-4
IC17	A-5	S6	C-1
IC18	C-3	S7	D-1
IC19	C-4	S8	C-4
IC20	C-4	S9	C-3
IC21	C-5	S10	C-5
IC22	E-1	S11	A-5
IC23	E-2	S12	D-4
IC24	D-3	S13	C-4
IC25	C-1	S14	D-5
IC26	B-1	S15	D-5
IC27	C-5	S16	C-5
IC28	B-5	S17	D-5
IC29	C-5		
IC30	B-5	X1	B-5
IC31	E-4		
IC32	E-4		
IC33	E-3		
*IC34	C-3		

*;SOLDERING SIDE

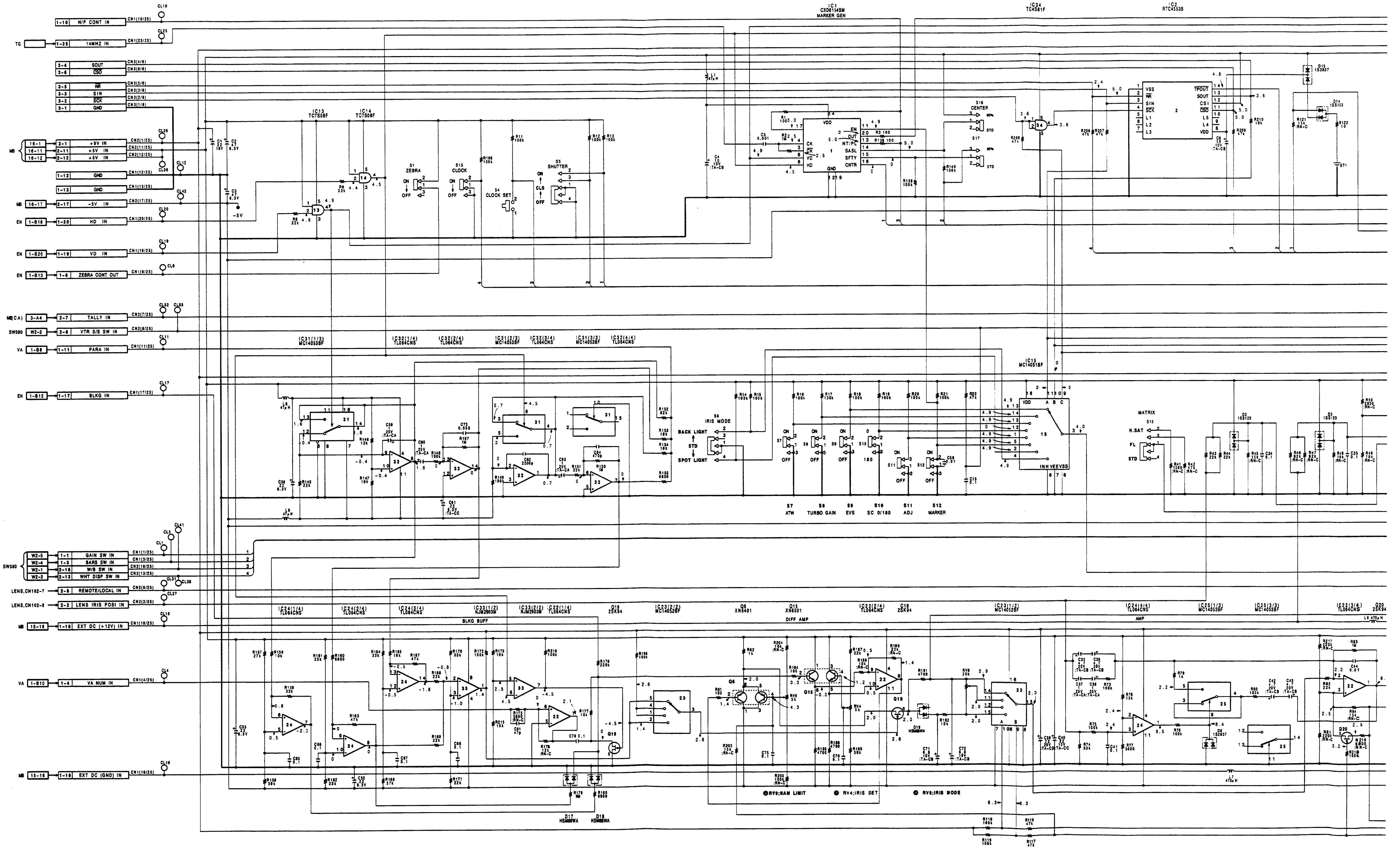


1-648-025-11 COMPONENT SIDE



1-648-025-11 SOLDERING SIDE

AT-78 BOARD

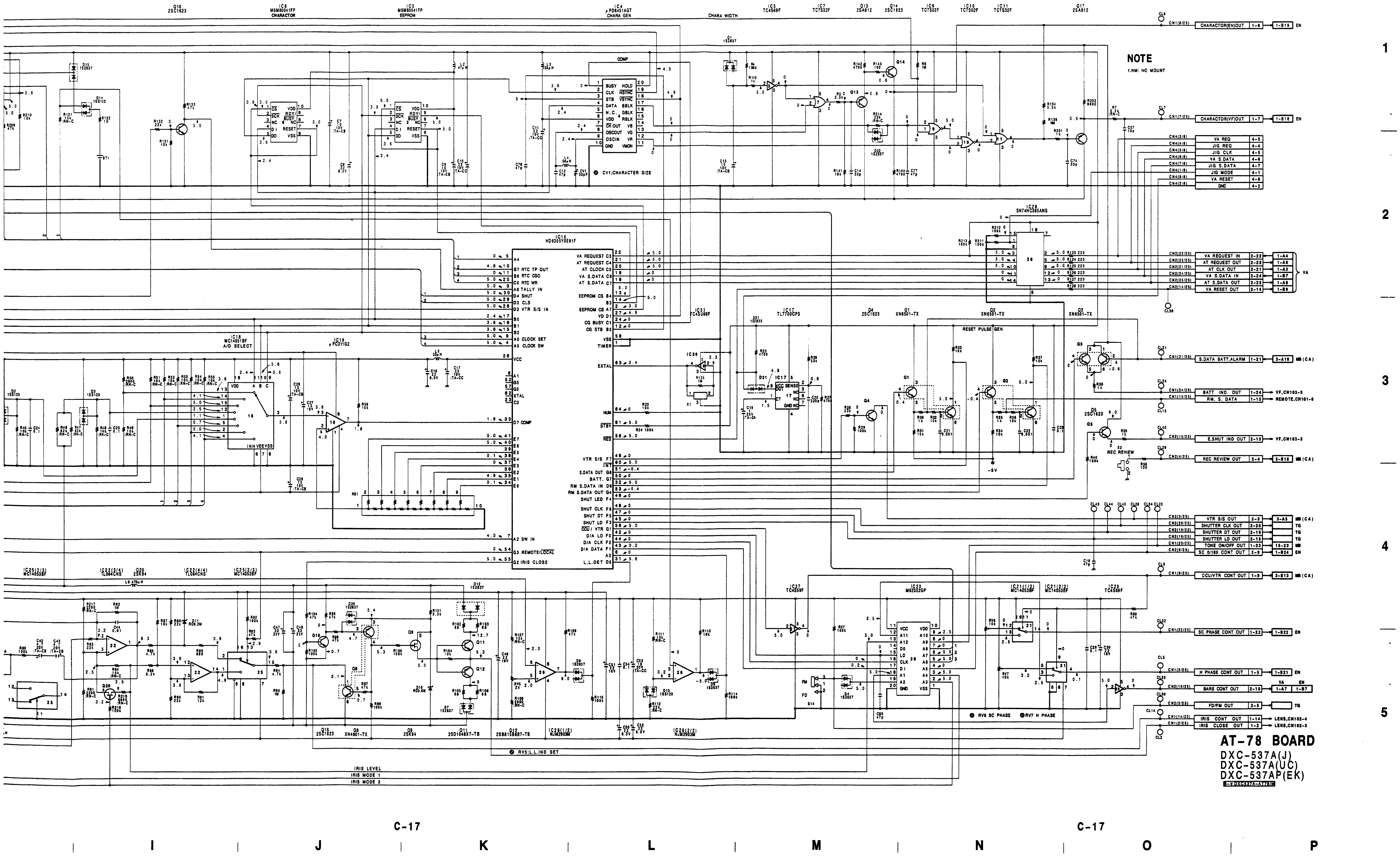

1-10 N/P CONT IN CN1(10/25)
TG 1-25 14MHZ IN CN1(25/25)
3-4 SOUT CN3(4/6)
3-6 CSO CN3(6/6)
3-5 WR CN3(5/6)
3-3 SIN CN3(3/6)
3-2 SCK CN3(2/6)
3-1 GND CN3(1/6)
MB 16-1 2-1 +9V IN CN2(1/25)
16-11 2-11 +5V IN CN2(11/25)
16-12 2-12 +5V IN CN2(12/25)
1-12 GND CN1(12/25)
1-13 GND CN1(13/25)
MB 16-17 2-17 -5V IN CN2(17/25)
EN 1-B18 1-20 HD IN CN1(20/25)
EN 1-B20 1-19 VD IN CN1(19/25)
EN 1-B13 1-6 ZEBRA CONT OUT CN1(6/25)
MB(CA) 3-A4 2-7 TALLY IN CN2(7/25)
SW590 W2-2 2-8 VTR S/S SW IN CN2(8/25)
VA 1-B8 1-11 PARA IN CN1(11/25)
EN 1-B12 1-17 BLKG IN CN1(17/25)
SW590 W2-5 1-1 GAIN SW IN CN1(1/25)
W2-4 1-3 BARS SW IN CN1(3/25)
W2-1 2-18 W/B SW IN CN2(18/25)
W2-3 2-13 WHT DISP SW IN CN2(13/25)
LENS,CN102-7 2-5 REMOTE/LOCAL IN CN2(5/25)
LENS,CN102-8 2-2 LENS IRIS POSI IN CN2(2/25)
MB 15-18 1-18 EXT DC (+12V) IN CN1(18/25)
VA 1-B10 1-4 VA NUM IN CN1(4/25)
MB 15-16 1-16 EXT DC (GND) IN CN1(16/25)
IC1 CXD8154BM MARKER GEN
IC34 TC4S81F
IC2 RTC4553B
IC13 TC7S08F
IC14 TC7S08F
S1 ZEBRA
S15 CLOCK
S4 CLOCK SET
S5 SHUTTER
S16 CENTER
S17
IC31(1/3) MC14053BF
IC32(1/4) TL084CNS
IC32(2/4) TL084CNS
IC31(2/3) MC14053BF
IC32(3/4) TL084CNS
IC31(3/3) MC14053BF
IC32(4/4) TL084CNS
IC15 MC14051BF
S6 IRIS MODE
BACK LIGHT
STD
SPOT LIGHT
S7 ATW
S8 TURBO GAIN
S9 EVS
S10 SC 0/180
S11 ADJ
S12 MARKER
MATRIX S13
H.SAT
FL
STD
IC24(1/4) TL084CNS
IC24(2/4) TL084CNS
IC24(3/4) TL084CNS
IC33(1/2) NJM2903M
IC33(2/2) NJM2903M
IC22(1/4) TL084CNS
Q19 2SK94
IC23(2/2) MC14052BF
Q5 XN6401
Q15 XN6501
IC22(2/4) TL084CNS
Q16 2SK94
IC23(1/2) MC14052BF
IC24(4/4) TL084CNS
IC25(1/3) MC14053BF
IC25(3/3) MC14053BF
IC22(3/4) TL084CNS
Q20 2SK94
BLKG BUFF
DIFF AMP
AMP
RV5;RAM LIMIT
RV4;IRIS SET
RV6;IRIS MODE
D17 HSM88WA
D18 HSM88WA
D19 HSM88WA

DXC-537A (J,UC)
DXC-537AP(EK)

C-17 C-17

A | B | C | D | E | F | G | H |

AT-78 AT-78


NOTE
1.NM: NO MOUNT
Q10 2SC1623
IC6 M6M80041FP CHARACTOR
IC3 M6M80041FP EEPROM
IC4 μPD6451AGT CHARA GEN
CHARA WIDTH
IC5 TC4S69F
IC7 TC7S32F
Q13 2SA812
Q14 2SC1623
IC9 TC7S02F
IC10 TC7S02F
IC11 TC7S32F
Q17 2SA812
CV1:CHARACTER SIZE
IC28 SN74HC365ANS
IC15 HD6303YOE91F
IC18 MC14051BF A/D SELECT
IC19 μPC311G2
IC33 TC4S69F
IC17 TL7700CPS
Q4 2SC1623
Q1 XN6501-TX
Q2 XN6501-TX
Q3 XN6501-TX
RESET PULSE GEN
Q5 2SC1623
S2 REC REVIEW
IC25(3/3) MC14053BF
IC22(3/4) TL084CNS
Q20 2SK94
IC22(4/4) TL084CNS
IC25(2/3) MC14053BF
IC27 TC4S69F
IC20 M62352GP
IC21(1/2) MC14053BF
IC21(2/2) MC14053BF
IC29 TC4S69F
Q16 2SC1623
Q8 XN4601-TX
Q9 2SK94
Q11 2SD1048X7-TB
Q12 2SB815B6B7-TB
IC26(1/2) NJM2903M
IC26(2/2) NJM2903M
RV5:L.L.IND SET
RV6 SC PHASE
RV7 H PHASE
IRIS LEVEL
IRIS MODE 1
IRIS MODE 2
CN1(8/25) CHARACTOR(EN)OUT 1-8 1-B19 EN
CN1(7/25) CHARACTOR(VF)OUT 1-7 1-B16 EN
CN4(3/8) VA REQ 4-3
CN4(4/8) JIG REQ 4-4
CN4(5/8) JIG CLK 4-5
CN4(6/8) VA S.DATA 4-6
CN4(7/8) JIG S.DATA 4-7
CN4(1/8) JIG MODE 4-1
CN4(8/8) VA RESET 4-8
CN4(2/8) GND 4-2
CN2(22/25) VA REQUEST IN 2-22 1-A4
CN2(23/25) AT REQUEST OUT 2-23 1-A6
CN2(21/25) AT CLK OUT 2-21 1-A3
CN2(24/25) VA S.DATA IN 2-24 1-B7
CN2(25/25) AT S.DATA OUT 2-25 1-A8
CN2(14/25) VA RESET OUT 2-14 1-B9
VA
CN1(21/25) S.DATA BATT.ALARM 1-21 3-A18 MB(CA)
CN1(24/25) BATT IND OUT 1-24 VF,CN103-5
CN1(15/25) RM. S. DATA 1-15 REMOTE,CN101-6
CN2(15/25) E.SHUT IND OUT 2-15 VF,CN103-3
CN2(4/25) REC REVIEW OUT 2-4 3-B18 MB(CA)
CN2(3/25) VTR S/S OUT 2-3 3-A5 MB(CA)
CN2(20/25) SHUTTER CLK OUT 2-20 TG
CN2(19/25) SHUTTER DT OUT 2-19 TG
CN2(18/25) SHUTTER LD OUT 2-18 TG
CN1(23/25) TONE ON/OFF OUT 1-23 15-23 MB
CN2(9/25) SC 0/180 CONT OUT 2-9 1-B24 EN
CN1(9/25) CCU/VTR CONT OUT 1-9 3-B13 MB(CA)
CN1(22/25) SC PHASE CONT OUT 1-22 1-B22 EN
CN1(5/25) H PHASE CONT OUT 1-5 1-B21 EN
CN2(10/25) BARS CONT OUT 2-10 VA 1-A7 EN 1-B7
CN2(5/25) FD/FM OUT 2-5 TG
CN1(14/25) IRIS CONT OUT 1-14 LENS,CN102-4
CN1(2/25) IRIS CLOSE OUT 1-2 LENS,CN102-3
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C-17
C-17
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AT-78 BOARD
DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)
B-¥DXC537A-AT78/M

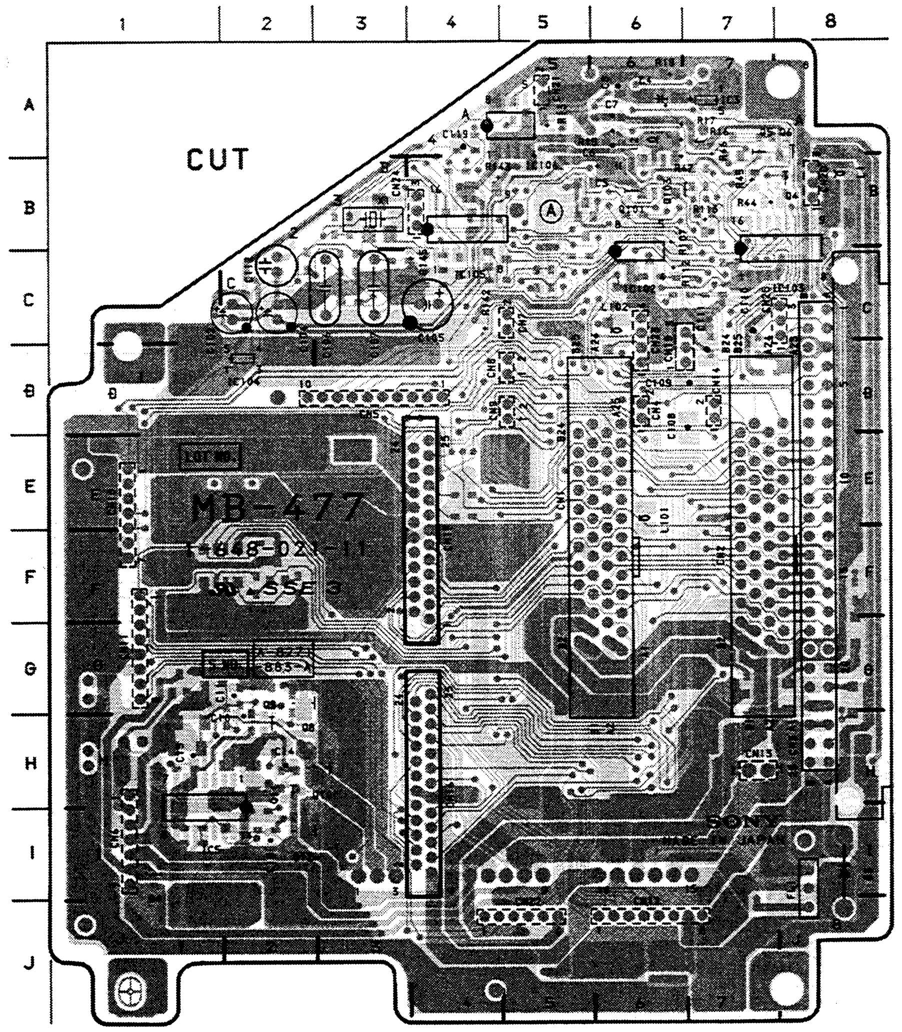
MB-477 BOARD

SERIAL No. 10001-10293 (UC)
30001-30281 (J)
40001-40481 (EK)

MB-477(1-648-021-11)

CN1	E-5	IC102	C-6
CN2	F-7	IC103	C-8
CN3	H-8	IC104	D-2
*CN4	D-6	IC105	C-4
*CN5	D-3	IC106	B-5
*CN6	I-1		
*CN7	C-4	L1	B-8
*CN8	D-4	L2	A-6
*CN9	D-4		
*CN10	E-1	L101	E-6
*CN11	G-1	L102	C-6
*CN12	J-6	*L103	D-5
*CN13	H-7	*L106	G-8
*CN14	D-7	*L107	G-7
CN15	F-4	*L108	G-8
CN16	H-4		
*CN19	D-6	*Q3	F-2
*CN20	B-8	Q4	B-8
*CN21	A-5	Q5	A-7
*CN22	J-5	Q6	A-8
*CN23	C-6	Q8	H-2
*CN24	B-4	Q9	G-2
*CN25	C-7	Q10	H-3
		Q11	H-2
*D1	G-1	Q12	I-2
*D2	A-7		
D3	I-8	Q101	B-6
D4	I-1	*Q102	A-8
		Q103	B-6
*D101	B-5	*Q104	B-7
*D102	B-6	*Q105	C-5
*FL1	I-8	*RV101	B-3
*IC1	F-2	*VCO1	A-7
IC3	A-7		
IC5	I-1	X1	B-3
*IC101	B-6		

*;SOLDERING SIDE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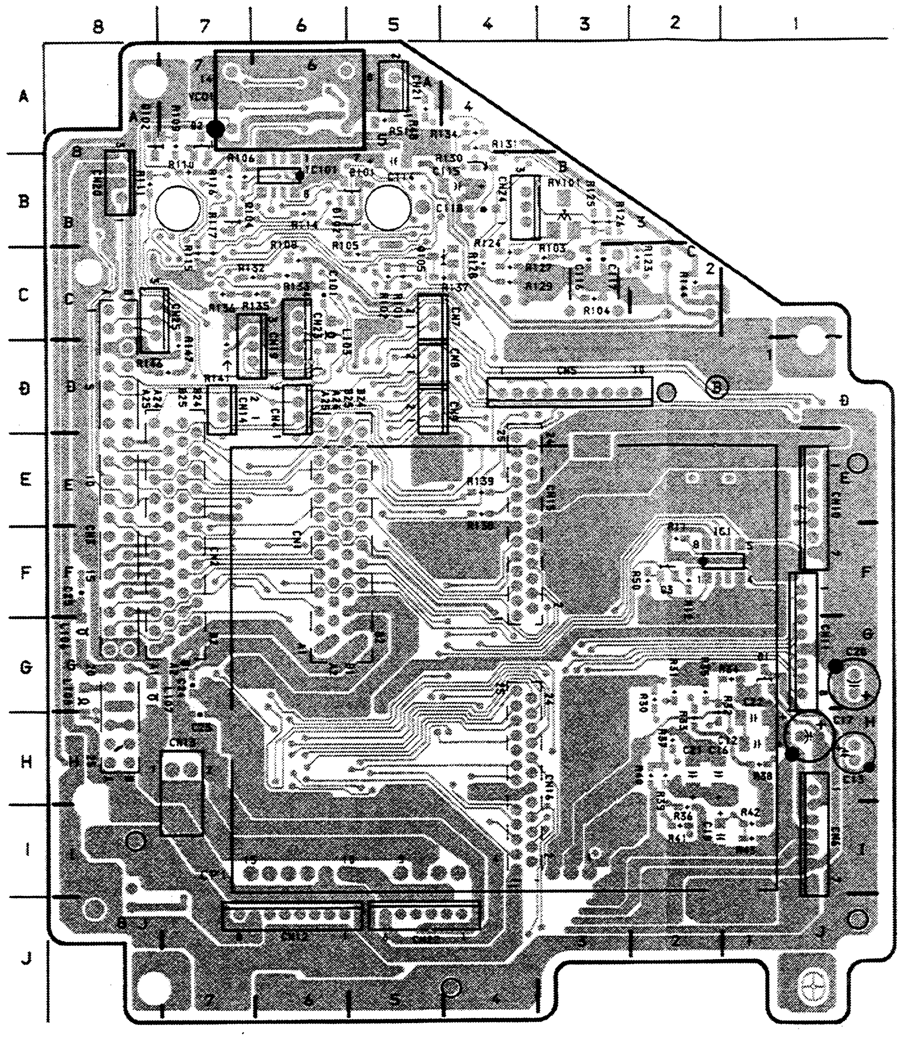
CUT
MB-477
1-648-021-11
SONY

1-648-021-11 COMPONENT SIDE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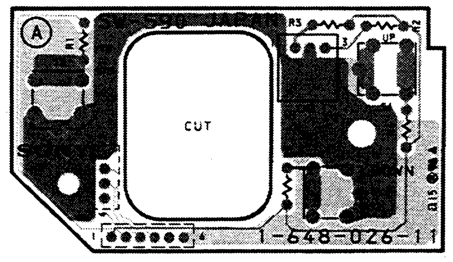
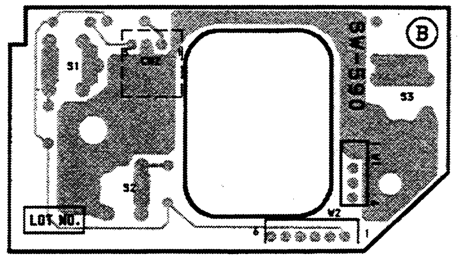
1-648-021-11 SOLDERING SIDE

SW-590 BOARD

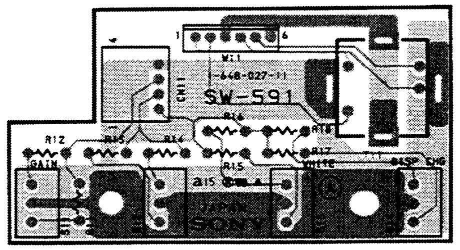

A
CUT
1-648-026-11

1-648-026-11 COMPONENT SIDE

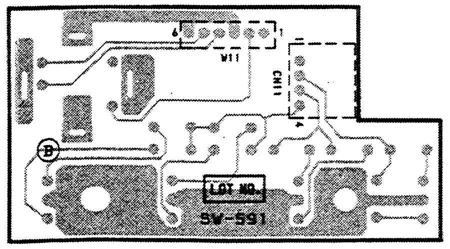

B
SW-590
LOT NO.

1-648-026-11 SOLDERING SIDE

SW-591 BOARD


SW-591
1-648-027-11
SONY

1-648-027-11 COMPONENT SIDE


B
LOT NO.
SW-591

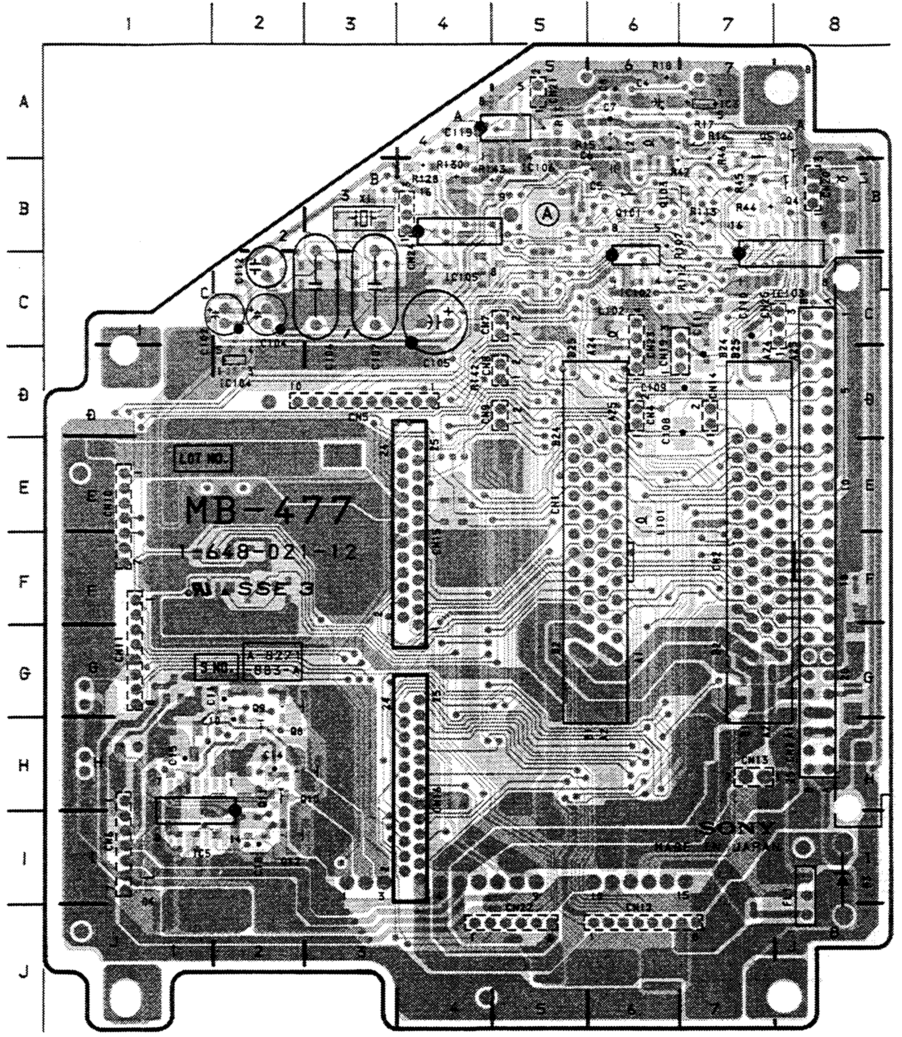
1-648-027-11 SOLDERING SIDE

SERIAL No. 10351 and higher (UC)
30301 and higher (J)
40501 and higher (EK)

MB-477(1-648-021-12)

CN1	E-5	IC102	C-6
CN2	F-7	IC103	C-8
CN3	H-8	IC104	D-2
*CN4	D-6	IC105	C-4
*CN5	D-3	IC106	B-5
*CN6	I-1		
*CN7	C-4	L1	B-8
*CN8	D-4	L2	A-6
*CN9	D-4		
*CN10	E-1	L101	E-6
*CN11	G-1	L102	C-6
*CN12	J-6	*L103	D-5
*CN13	H-7	*L106	G-8
*CN14	D-7	*L107	G-7
CN15	F-4	*L108	G-8
CN16	H-4		
*CN19	D-6	*Q3	F-2
*CN20	B-8	Q4	B-8
*CN21	A-5	Q5	A-7
*CN22	J-5	Q6	A-8
*CN23	C-6	Q8	H-2
*CN24	B-4	Q9	G-2
*CN25	C-7	Q10	H-3
		Q11	H-2
*D1	G-1	Q12	I-2
*D2	A-7		
D3	I-8	Q101	B-6
D4	I-1	*Q102	A-8
		Q103	B-6
*D101	B-5	*Q104	B-7
*D102	B-6	*Q105	C-5
*FL1	I-8	*RV101	B-3
*IC1	F-2	*VCO1	A-7
IC3	A-7		
IC5	I-1	X1	B-3
*IC101	B-6		

*;SOLDERING SIDE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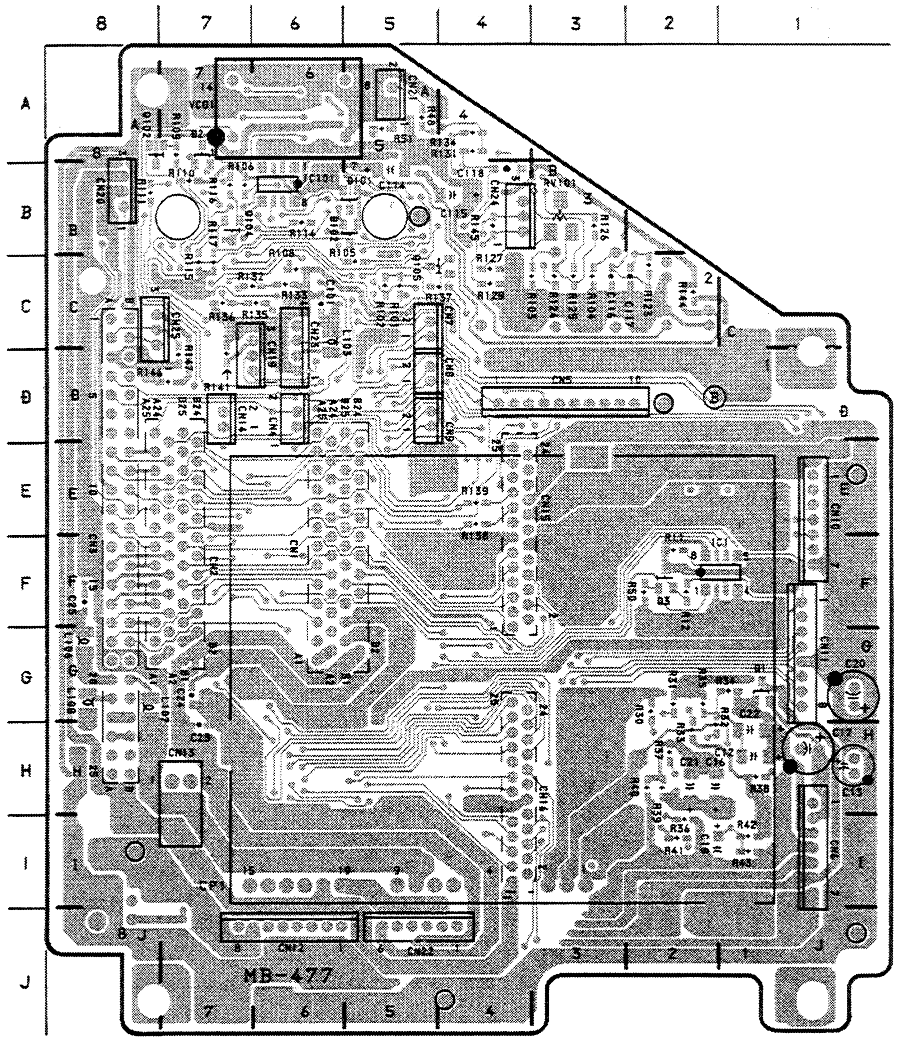
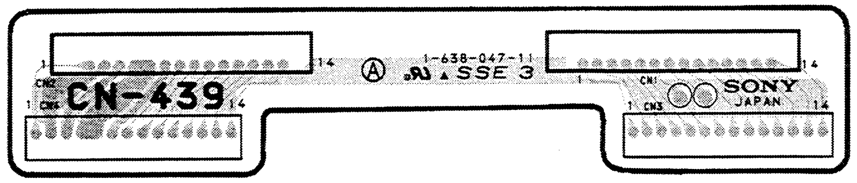
MB-477
1-648-021-12
SSE 3
LOT NO.
SONY
JAPAN

1-648-021-12 COMPONENT SIDE


8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
MB-477

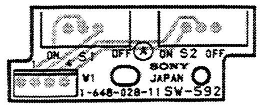
1-648-021-12 SOLDERING SIDE

CN-439 BOARD


CN-439
1-638-047-11
SSE 3
SONY
JAPAN
CN2
CN1
CN3
1
14

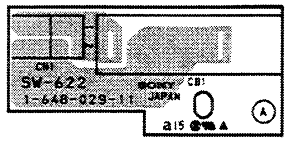
1-638-047-11 COMPONENT SIDE

SW-592 BOARD


S1
S2
ON
OFF
SONY
JAPAN
1-648-028-11 SW-592

1-648-028-11 COMPONENT SIDE

SW-622 BOARD


CN1
SW-622
1-648-029-11
SONY
JAPAN
CB1

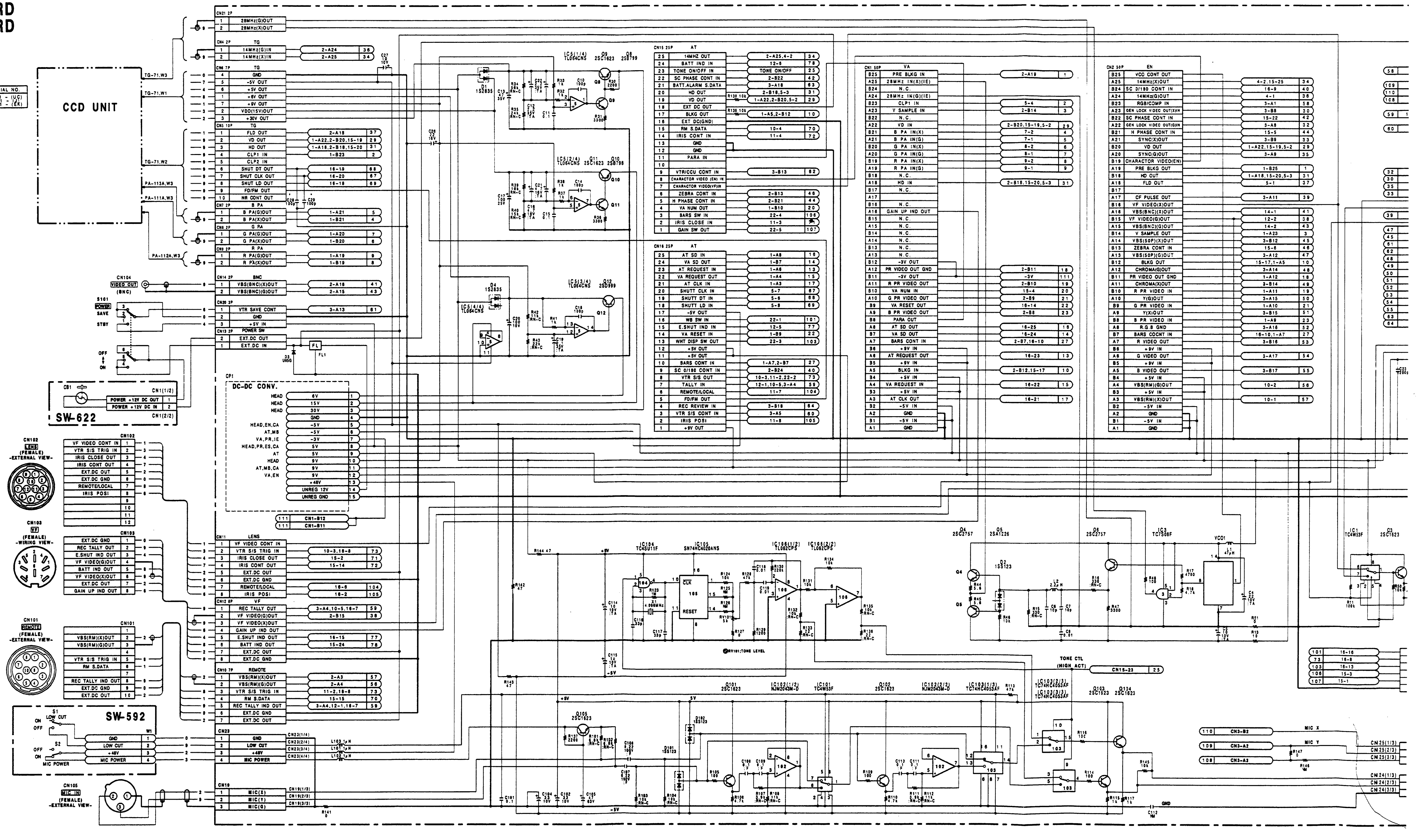
1-648-029-11 COMPONENT SIDE

FRAME
MB-477 BOARD
SW-590 BOARD
SW-591 BOARD
SW-592 BOARD
SW-622 BOARD

NOTE NM : NO MOUNT

*

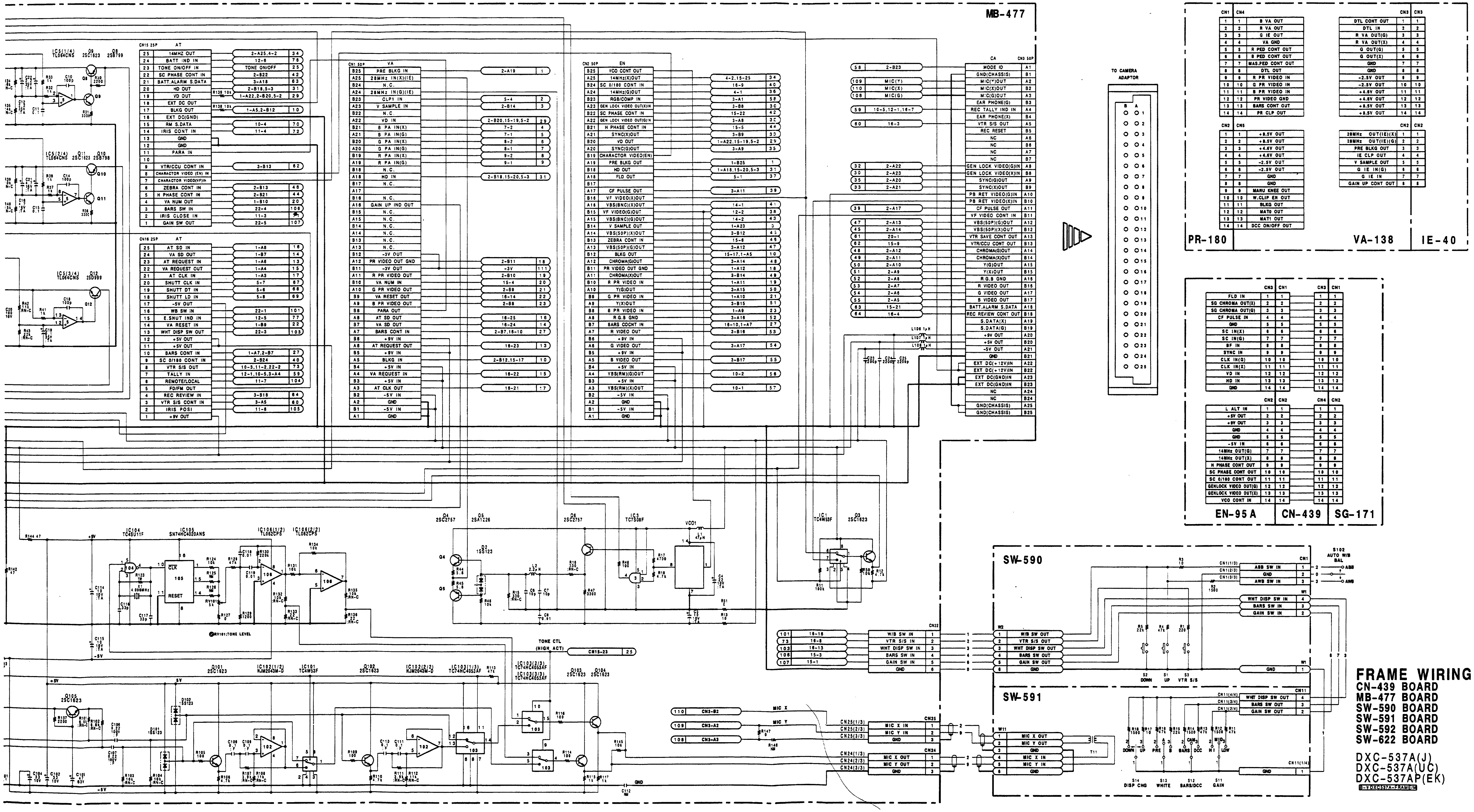
REF. NO.	CHANGE INFORMATION	SERIAL NO.
C28,C29	ADD	10351 - (UC) 30301 - (J) 40501 - (EK)


CCD UNIT
TG-71,W3
TG-71,W1
TG-71,W2
PA-113A,W3
PA-111A,W3
PA-112A,W3
CN21 2P
28MHz(G)OUT
28MHz(X)OUT
CN4 2P TG
CN6 7P TG
CN5 10P TG
CN7 2P B PA
CN8 2P G PA
CN9 2P R PA
CN14 2P BNC
CN104 VIDEO OUT (BNC)
S101 POWER SAVE STBY
OFF ON
CN20 3P
VTR SAVE CONT
CN13 2P POWER SW
EXT.DC OUT
EXT.DC IN
FL1
CB1
POWER +12V DC OUT
POWER +12V DC IN
SW-622
CP1
DC-DC CONV.
CN102 LENS (FEMALE) -EXTERNAL VIEW-
CN103 VF (FEMALE) -WIRING VIEW-
CN101 REMOTE (FEMALE) -EXTERNAL VIEW-
SW-592
S1 LOW CUT ON OFF
S2 OFF ON MIC POWER
CN105 MIC IN (FEMALE) -EXTERNAL VIEW-
CN11 LENS
CN12 8P VF
CN10 7P REMOTE
CN23
CN19
MIC(X)
MIC(Y)
MIC(G)
CN15 25P AT
CN16 25P AT
CN1 50P VA
CN2 50P EN
IC5(1/4) TL064CNS
IC5(2/4) TL064CNS
IC5(3/4) TL064CNS
IC5(4/4) TL064CNS
IC104 TC4SU11F
IC105 SN74HC4020ANS
IC106(1/2) TL062CPS
IC106(2/2) TL062CPS
RV101 TONE LEVEL
TONE CTL (HIGH ACT)
IC101 TC4W53F
IC102(1/2) NJM2043M-D
IC102(2/2) NJM2043M-D
IC103(1/3) TC74HC4053AF
IC3 TC7S08F
VCO1
IC1 TC4W53F
CN25(1/3)
CN25(2/3)
CN25(3/3)
CN24(1/3)
CN24(2/3)
CN24(3/3)
MIC X
MIC Y

DXC-537A (J,UC)
DXC-537AP(EK)

C-19

C-19


MB-477
CN15 25P AT
CN16 25P AT
CN1 50P VA
CN2 50P EN
CA CN3 50P
TO CAMERA ADAPTOR
PR-180
VA-138
IE-40
EN-95A
CN-439
SG-171
SW-590
SW-591
S102 AUTO W/B BAL
ABB
AWB
S2 DOWN
S1 UP
S3 VTR S/S
S14 DISP CHG
S13 WHITE
S12 BARS/DCC
S11 GAIN
TONE CTL (HIGH ACT)
RV101:TONE LEVEL
MIC X
MIC Y

FRAME WIRING
CN-439 BOARD
MB-477 BOARD
SW-590 BOARD
SW-591 BOARD
SW-592 BOARD
SW-622 BOARD

DXC-537A(J)
DXC-537A(UC)
DXC-537AP(EK)

B-¥DXC537A-FRAME/M

SECTION D
SPARE PARTS

PARTS INFORMATION

1. **Safety Related Component Warning**

   Components indentified by shading marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to **"accommodating the improved parts and/or engineering changes" or "standardization of genuine parts."** This manual 's exploded view and electrical spare parts lists are indicating the parts numbers of " the standardized genuine parts at present." Regarding engineering parts and diagrams changes in our engineering department, refer to SONY service bulletins and service manual supplements.

3. The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Orders for parts marked with "O" will be processed, but allow for additional delivery time.

4. Item with no parts number and/or no description are not stocked because they are seldom required for routine service.

5. All capacitors are in micro farads unless otherwise specified.
   All inductors are in micro henries unless otherwise specified.
   All resistors are in ohms.

EXPLODED VIEW

CCD BLOCK

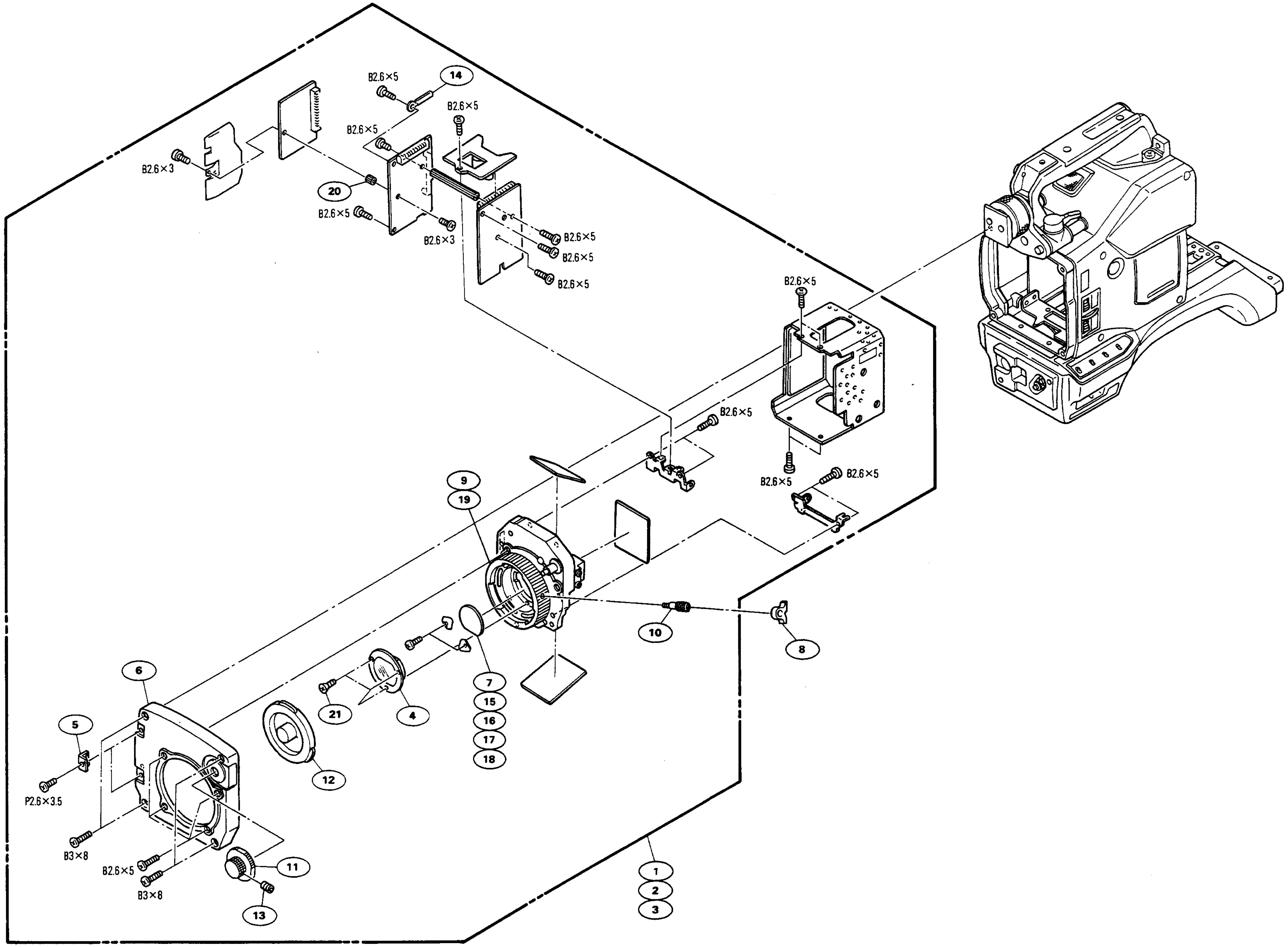
No.	Part No.	SP	Description
1	A-8268-103-A	s	CCD UNIT-C537A(N1) (FOR DXC-537A;J) *1
2	A-8268-104-A	s	CCD UNIT-C537AP(P) (FOR DXC-537AP) *2
3	A-8268-105-A	s	CCD UNIT-C537A(N2) (FOR DXC-537A;UC) *3
4	1-547-259-11	o	FILTER UNIT, OPTICAL
5	3-168-347-01	o	HOLDER, CABLE
6	3-168-368-04	o	PANEL, FRONT
7	3-174-682-01	s	FILTER, CROSS, PORTABLE CAMERA (FOR DXC-537A;J)
8	3-180-486-01	o	STOPPER, LOOSEN, MOUNT
9	3-708-651-01	o	RING, BAYONET (FOR DXC-537AP)
10	3-678-629-00	s	LEVER, MOUNT
11	3-688-781-02	s	KNOB, FILTER
12	3-699-048-01	s	CAP, MOUNT
13	3-701-506-01	s	SET SCREW, DOUBLE POINT 3X4
14	3-701-822-01	s	HOLDER, WIRE
15	3-708-637-01	o	FILTER, CC/ND
16	3-708-637-11	o	FILTER, CC/ND (FOR DXC-537A;UC, DXC-537AP)
17	3-708-637-21	o	FILTER, CC/ND
18	3-708-637-31	o	FILTER, CC/ND
19	3-708-638-01	o	RING, BAYONET (FOR DXC-537A)
20	3-674-361-01	o	SUPPORT, PCB
21	7-627-452-38	s	SCREW,PRECISION +K 2X5

*1 CCD BLOCK No. EEA xxxxx
*2 CCD BLOCK No. EFA xxxxx
*3 CCD BLOCK No. EGA xxxxx

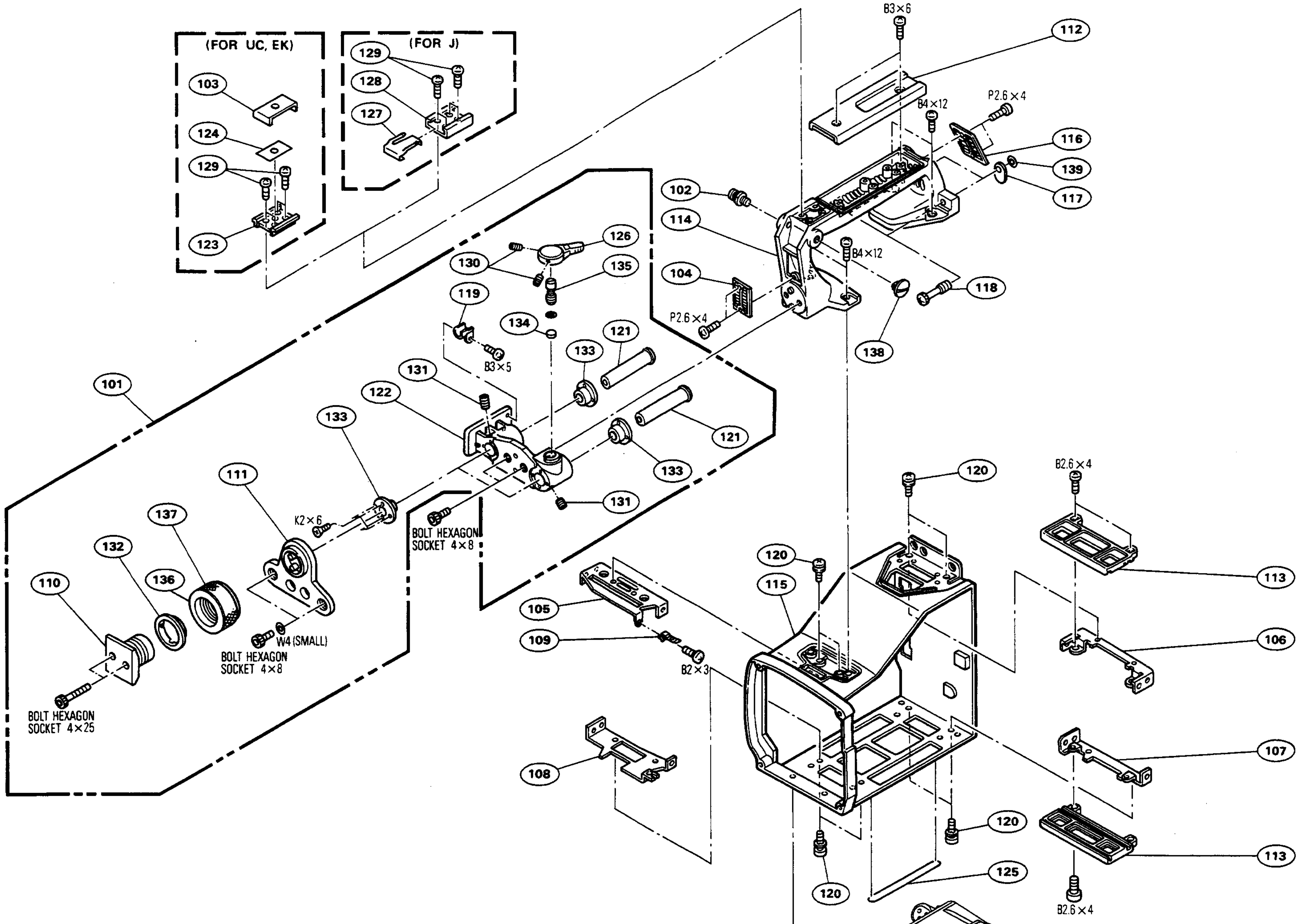
How to read the CCD BLOCK No.

```
E E A xxxxx
↑ ↑ ↑   ↑
│ │ │   └─Block number of CCD unit
│ │ └───Suffix of Spare part number
│ └───Model name (E:DXC-537A;J, F:DXC-537AP, G:DXC-537A;UC)
└CCD type
```

CCD BLOCK


B2.6×5
14
B2.6×5
B2.6×5
B2.6×3
20
B2.6×5
B2.6×3
B2.6×5
B2.6×5
B2.6×5
B2.6×5
B2.6×5
B2.6×5
B2.6×5
9
19
10
8
6
5
7
15
16
17
18
21
4
12
P2.6×3.5
B3×8
B2.6×5
B3×8
11
13
1
2
3

HANDLE BLOCK


(FOR UC, EK)
103
124
129
123
(FOR J)
129
128
127
B3×6
112
B4×12
P2.6×4
116
139
117
102
114
126
130
135
B4×12
104
P2.6×4
118
138
119
134
B3×5
133
121
131
122
101
133
121
133
131
111
137
K2×6
BOLT HEXAGON SOCKET 4×8
132
136
110
W4 (SMALL)
BOLT HEXAGON SOCKET 4×8
BOLT HEXAGON SOCKET 4×25
120
B2.6×4
120
115
105
109
B2×3
113
106
107
108
120
113
125
120
B2.6×4

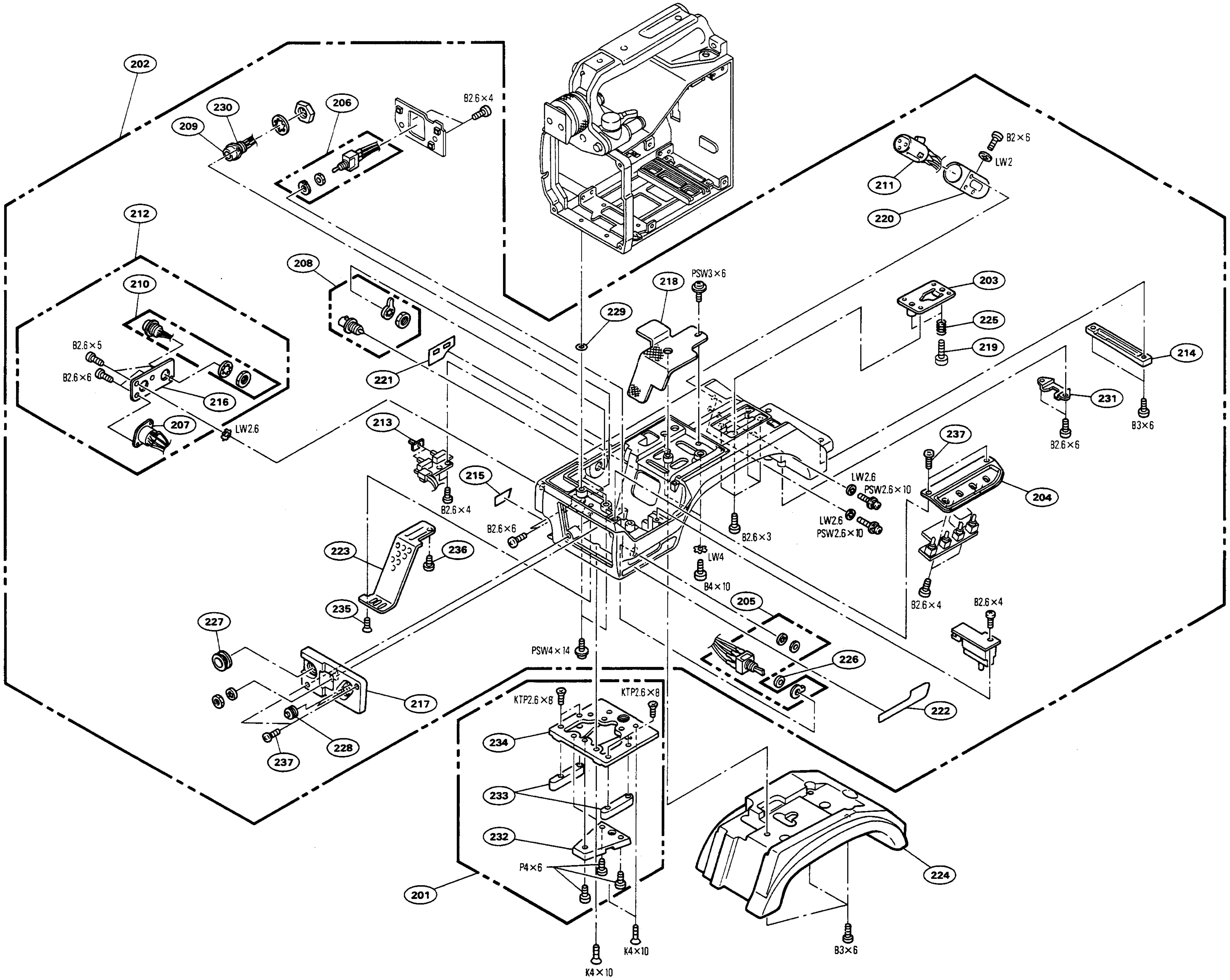
HANDLE BLOCK

No.	Part No.	SP	Description
101	A-8267-235-A	o	SLIDE ASSY, VF
102	X-3744-307-1	s	SUSPENSION ASSY
103	2-277-468-01	o	PLATE,ORNAMENTAL,CAMERA SHOE (FOR DXC-537A;UC, DXC-537AP)
104	3-168-324-02	o	LID (B), HANDLE
105	3-168-330-01	o	BRACKET (FRONT UPPER),PC BOARD
106	3-168-331-01	o	BRACKET (REAR UPPER), PC BOARD
107	3-168-332-01	o	BRACKET (REAR LOWER), PC BOARD
108	3-168-333-01	o	BRACKET (FRONT LOWER),PC BOARD
109	3-168-334-01	o	SPRING, AT
110	3-168-335-01	o	SHOE (2), VF SLIDE
111	3-168-362-01	o	TABLE (2), FIXED, VF SHOE
112	3-168-363-02	o	LID (A), HANDLE
113	3-168-364-01	o	RAIL, PC BOARD
114	3-168-369-02	o	HANDLE
115	3-168-370-12	o	CABINET
116	3-169-268-02	o	LID (C), HANDLE
117	3-175-714-01	o	STOPPER
118	3-175-715-02	s	SCREW, FITTING, ADAPTOR
119	3-176-706-11	o	CLAMP, CABLE
120	3-178-214-01	s	SCREW (M3X6), +B
121	3-179-906-01	o	ARM (AL)
122	3-179-910-01	o	TABLE, FIXED, VF SLIDE
123	3-657-700-00	s	BRACKET, ACCESSORY (FOR DXC-537A;UC, DXC-537AP)
124	3-672-213-00	o	SHEET, ADHESIVE (FOR DXC-537A;UC, DXC-537AP)
125	3-672-253-11	o	RUBBER, CONDUCTIVE
126	3-673-046-00	s	LEVER, LOCK
127	3-688-754-01	o	SPRING (FOR DXC-537A;J)
128	3-688-755-01	o	SHOE, ACCESSORY (FOR DXC-537A;J)
129	3-689-039-11	s	BOLT (M2X6), HOLE, HEXAGON
130	3-701-506-01	s	SET SCREW, DOUBLE POINT 3X4
131	3-701-508-00	s	SET SCREW, DOUBLE POINT 3X6
132	3-710-018-01	o	COLLAR, SLIDE
133	3-711-790-01	o	SPACER (A)
134	3-711-793-01	o	CUSHION (STOPPER)
135	3-711-794-01	o	PIN, STOPPER
136	3-711-795-11	o	RING (B), LOCK
137	3-720-919-01	o	RUBBER, LOCK RING
138	3-725-907-01	s	BUSHING, BLIND
139	3-892-114-00	s	RING (DIA. 3), O

CHASSIS (1) BLOCK

No.	Part No.	SP	Description
201	A-7612-352-A	s	SHOE (A) ASSY, V
202	A-8267-236-A	o	CHASSIS ASSY, BASE
203	X-3166-928-1	s	SHOE ASSY, STOPPER
204	X-3166-984-1	o	PANEL ASSY, SIDE SW
205	1-552-852-00	s	SWITCH, TOGGLE "POWER"
206	1-554-486-00	s	SWITCH, TOGGLE "AUTO W/B BAL"
207	1-561-320-00	s	CONNECTOR, 8P FEMALE "VF"
208	1-561-781-21	s	CONNECTOR, BNC "VIDEO OUT"
209	1-562-221-21	s	CONNECTOR, 12P FEMALE "LENS"
210	1-562-782-21	s	CONNECTOR, 10P FEMALE "REMOTE"
211	1-750-551-11	o	CONNECTOR, 3P FEMALE "MIC"
212	1-948-168-11	o	HARNESS (CN)
213	3-167-445-02	s	KNOB, SWITCH
214	3-168-337-02	s	FOOT
215	3-168-342-01	o	LABEL (LENS)
216	3-168-355-01	o	PLATE, CN
217	3-168-360-01	o	PANEL, FRONT SW
218	3-169-037-01	o	FILTER
219	3-175-715-02	s	SCREW, FITTING, ADAPTOR
220	3-179-903-01	o	BOX, CONNECTOR
221	3-179-904-01	o	LABEL, LEFT, SW
222	3-179-908-01	o	LABEL (POWER)
223	3-180-055-01	o	COVER (2), BOTTOM
224	3-180-207-01	s	PAD, SHOULDER
225	3-566-903-00	s	SPRING
226	3-669-117-21	o	SPACER, MOTOR
227	3-672-221-02	s	PACKING, CONTROL
228	3-676-244-00	s	COVER, SWITCH
229	3-687-116-01	o	WASHER (4), STOPPER
230	3-710-002-01	o	BRACKET
231	3-711-703-01	o	STOPPER
232	3-716-391-01	o	WEDGE, MOUNTING
233	3-729-064-01	o	GUARD (A), CAMERA SHOE
234	3-729-065-01	s	SHOE (A), CAMERA
235	7-627-454-37	s	SCREW, PRECISION +K 2.6X5
236	7-627-556-37	s	SCREW,PRECISION +P2.6X4 TYPE 1
237	7-627-556-58	s	SCREW, PRECISION +P2.6X5

CHASSIS (1) BLOCK


202
230
209
206
B2.6×4
212
210
B2.6×5
B2.6×6
216
207
LW2.6
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221
213
215
B2.6×4
B2.6×6
223
236
235
227
217
228
237
218
PSW3×6
229
211
B2×6
LW2
220
203
225
219
214
231
B2.6×6
B3×6
237
204
LW2.6
PSW2.6×10
LW2.6
PSW2.6×10
B2.6×3
LW4
B4×10
205
226
222
B2.6×4
B2.6×4
PSW4×14
KTP2.6×8
KTP2.6×8
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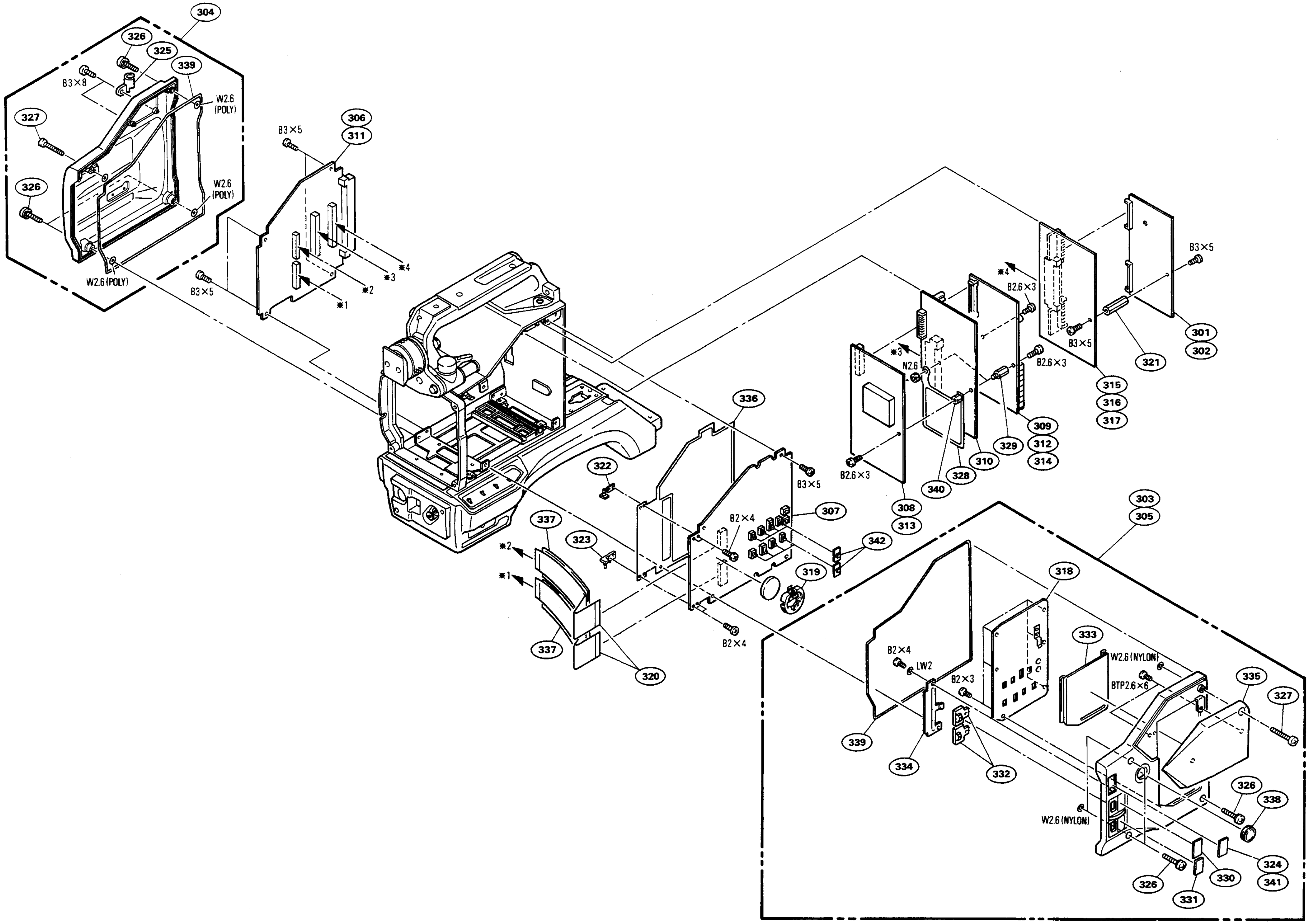
233
232
P4×6
201
K4×10
K4×10
224
B3×6

CHASSIS (2) BLOCK


304
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325
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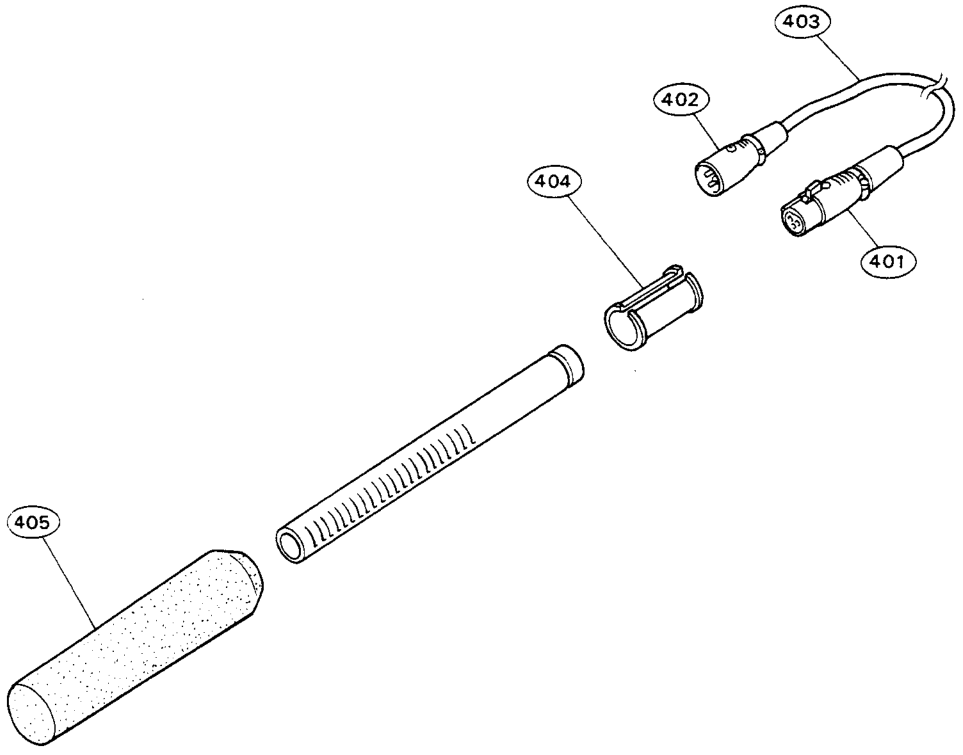
B3×8
W2.6 (POLY)
327
326
W2.6 (POLY)
W2.6 (POLY)
B3×5
306
311
*4
*3
*2
*1
B3×5
B3×5
*4
B2.6×3
301
302
B3×5
321
315
316
317
*3
N2.6
B2.6×3
329
309
312
314
310
328
340
B2.6×3
308
313
336
322
B3×5
307
B2×4
342
303
305
337
*2
*1
323
319
318
337
B2×4
320
333
W2.6 (NYLON)
BTP2.6×6
335
327
B2×4
LW2
B2×3
339
334
332
326
338
W2.6 (NYLON)
324
341
330
326
331

CHASSIS (2) BLOCK

No.	Part No.	SP	Description
301	A-7515-288-A	o	MOUNTED CIRCUIT BOARD, SG-171 (N) (FOR DXC-537A)
302	A-7515-289-A	o	MOUNTED CIRCUIT BOARD, SG-171 (P) (FOR DXC-537AP)
303	A-8267-238-C	o	PLATE (R) ASSY, SIDE (FOR DXC-537A;UC, DXC-537AP)
304	A-8267-240-B	o	PLATE (L) ASSY, SIDE
305	A-8267-256-C	o	PLATE (R) ASSY, SIDE (FOR DXC-537A;J)
306	A-8271-883-A	o	MOUNTED CIRCUIT BOARD, MB-477 (N) (FOR DXC-537A)
307	A-8271-903-A	o	MOUNTED CIRCUIT BOARD, AT-78
308	A-8271-904-A	o	MOUNTED CIRCUIT BOARD, IE-40 (N) (FOR DXC-537A)
309	A-8271-905-A	o	MOUNTED CIRCUIT BOARD, PR-180 (FOR DXC-537A;UC)
310	A-8271-906-A	o	MOUNTED CIRCUIT BOARD, VA-138
311	A-8271-909-A	o	MOUNTED CIRCUIT BOARD, MB-477 (P) (FOR DXC-537AP)
312	A-8271-910-A	o	MOUNTED CIRCUIT BOARD, PR-180 (FOR DXC-537AP)
313	A-8271-911-A	o	MOUNTED CIRCUIT BOARD, IE-40 (P) (FOR DXC-537AP)
314	A-8271-912-A	o	MOUNTED CIRCUIT BOARD, PR-180 (FOR DXC-537A;J)
315	A-8271-936-A	o	MOUNTED CIRCUIT BOARD, EN-95A (U) (FOR DXC-537A;UC)
316	A-8271-937-A	o	MOUNTED CIRCUIT BOARD, EN-95A (FOR DXC-537A;J)
317	A-8271-938-A	o	MOUNTED CIRCUIT BOARD, EN-95A (P) (FOR DXC-537AP)
318	X-3167-005-2	o	PLATE ASSY
319	1-550-414-31	s	HOLDER, BATTERY
320	1-590-489-11	s	CABLE, FLAT 25P
321	2-280-622-41	o	SUPPORT (M3), HEXAGON
322	3-168-353-01	o	BRACKET (UPPER), AT
323	3-168-354-01	o	BRACKET (LOWER), AT
324	3-174-408-01	o	LABEL, FILTER (FOR DXC-537A;J)
325	3-176-706-11	o	CLAMP, CABLE
326	3-178-213-31	s	SCREW (M3X12), +B
327	3-178-213-51	s	SCREW (M3X20), +B
328	3-179-896-01	o	PLATE, SHIELD, VA
329	3-179-897-01	o	SUPPORT
330	3-179-899-01	o	LABEL (IRIS)
331	3-179-900-01	o	LABEL (ATW)
332	3-179-905-02	o	KNOB, SLIDE
333	3-179-911-02	o	LID, SLIDE
334	3-179-912-02	o	GUIDE, KNOB
335	3-179-913-01	s	PAD, SIDE
336	3-179-914-01	o	PLATE, SHIELD, AT
337	3-180-487-01	o	PLATE, SHIELD, FC
338	3-672-221-02	s	PACKING, CONTROL
339	3-672-253-11	o	RUBBER, CONDUCTIVE
340	3-674-361-01	o	SUPPORT, PC BOARD
341	3-678-607-02	o	LABEL, FILTER (FOR DXC-537A;UC, DXC-537AP)
342	3-717-900-01	s	KNOB (A) (TC), SW

MICROPHONE AND CABLE

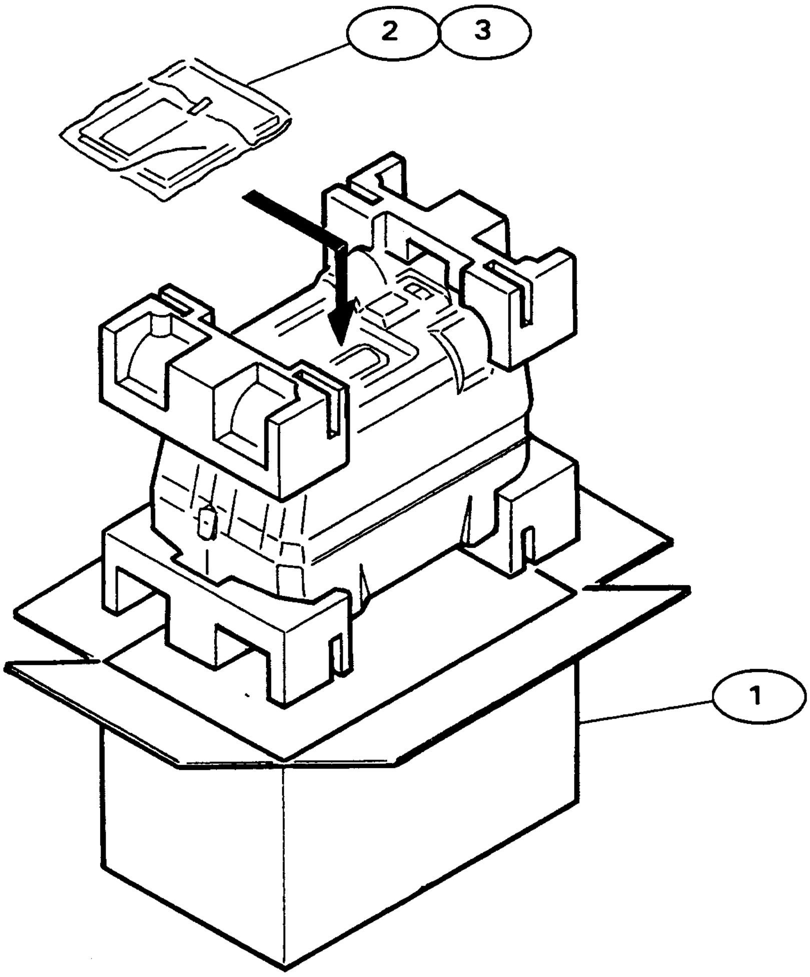


ELECTRET CONDENSER MICROPHONE: ECM-670
MICROPHONE CABLE : EC-0.3C2

MICROPHONE AND CABLE

No.	Part No.	SP	Description
401	1-508-083-21	o	CONNECTOR, 3P FEMALE
402	1-508-084-31	o	CONNECTOR, 3P MALE
403	1-551-545-00	s	CORD, MICROPHONE
404	3-179-882-01	o	SPACER, MICROPHONE
405	3-708-636-01	s	SCREEN, WIND

PACKING MATERIAL AND ACCESSORIES

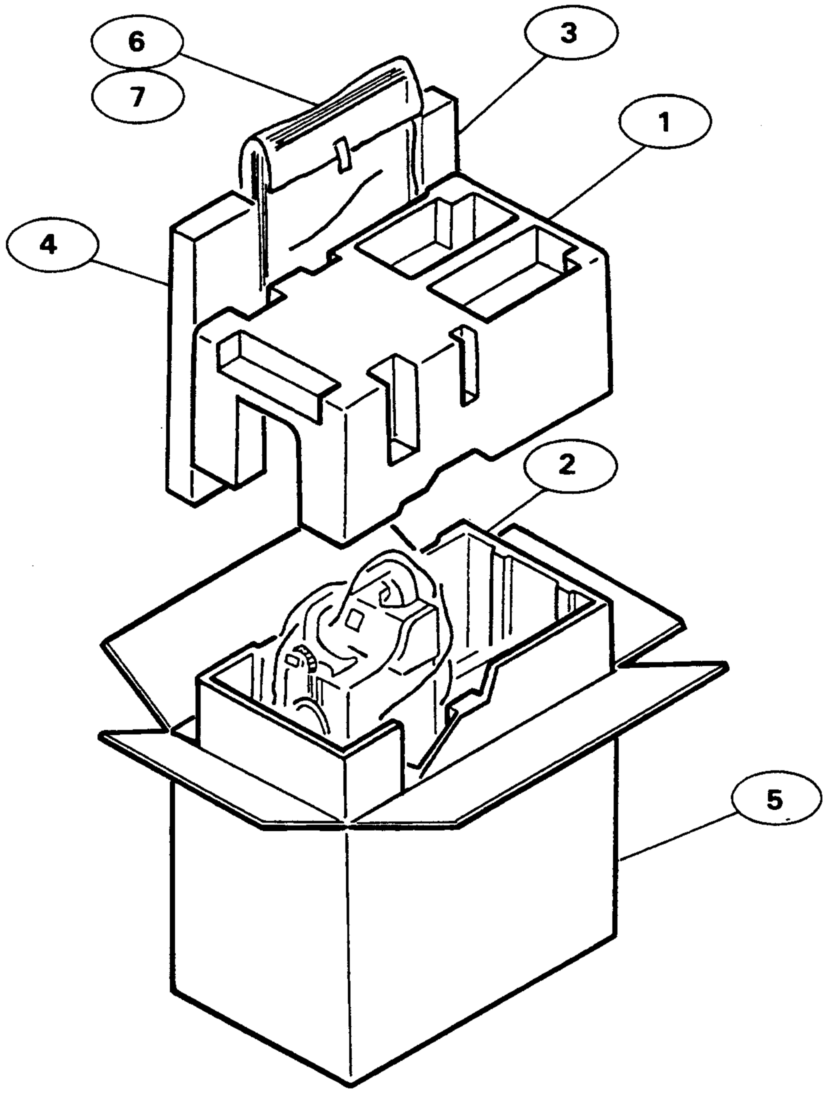


DXC-537AK/537APK

No.	Part No.	SP	Description
1	3-179-884-01	o	INDIVIDUAL CARTON (FOR DXC-537AK)
	3-179-885-01	o	INDIVIDUAL CARTON (FOR DXC-537APK)
2	3-756-770-01	s	INSTRUCTION MANUAL (JAPANESE)
	3-756-770-11	s	INSTRUCTION MANUAL (ENGLISH)
	3-756-770-41	s	INSTRUCTION MANUAL (FRENCH)
	3-756-770-51	s	INSTRUCTION MANUAL (GERMAN)
	3-756-770-61	s	INSTRUCTION MANUAL (ITALIAN)
	3-756-770-71	s	INSTRUCTION MANUAL (CHINESE)
	3-756-771-01	s	INSTRUCTION MANUAL (JAPANESE)
3	3-764-889-01	o	CHART, ADJUSTMENT

DXC-537AL/537APL

No.	Part No.	SP	Description
1	3-179-890-01	o	INDIVIDUAL CARTON (FOR DXC-537AL)
	3-179-891-01	o	INDIVIDUAL CARTON (FOR DXC-537APL)
2	3-756-770-01	s	INSTRUCTION MANUAL (JAPANESE)
	3-756-770-11	s	INSTRUCTION MANUAL (ENGLISH)
	3-756-770-41	s	INSTRUCTION MANUAL (FRENCH)
	3-756-770-51	s	INSTRUCTION MANUAL (GERMAN)
	3-756-770-61	s	INSTRUCTION MANUAL (ITALIAN)
	3-756-770-71	s	INSTRUCTION MANUAL (CHINESE)
	3-756-771-01	s	INSTRUCTION MANUAL (JAPANESE)
3	3-764-889-01	o	CHART, ADJUSTMENT



DXC-537AH/537APH

No.	Part No.	SP	Description
1	3-171-972-03	o	CUSHION (UPPER)
2	3-171-973-01	o	CISHION (LOWER)
3	3-180-067-01	o	SPACER (A)
4	3-180-068-01	o	SPACER (B)
5	3-180-070-01	o	INDIVIDUAL CARTON (FOR DXC-537AH)
	3-180-069-01	o	INDIVIDUAL CARTON (FOR DXC-537APH)
6	3-756-770-01	s	INSTRUCTION MANUAL (JAPANESE)
	3-756-770-11	s	INSTRUCTION MANUAL (ENGLISH)
	3-756-770-41	s	INSTRUCTION MANUAL (FRENCH)
	3-756-770-51	s	INSTRUCTION MANUAL (GERMAN)
	3-756-770-61	s	INSTRUCTION MANUAL (ITALIAN)
	3-756-770-71	s	INSTRUCTION MANUAL (CHINESE)
	3-756-771-01	s	INSTRUCTION MANUAL (JAPANESE)
7	3-764-889-01	o	CHART, ADJUSTMENT

ELECTRICAL PARTS

CAPACITOR, CHIP CERAMIC

Part No.	SP	Description
1-163-082-00	s	CAP, CHIP CERAMIC 0.5pF +-0.25pF 50V
1-163-083-00	s	CAP, CHIP CERAMIC 1pF +-0.25pF 50V
1-163-084-00	s	CAP, CHIP CERAMIC 1.5pF +-0.25pF 50V
1-163-085-00	s	CAP, CHIP CERAMIC 2pF +-0.25pF 50V
1-163-811-11	s	CAP, CHIP CERAMIC 2.5pF +-0.25pF 50V
1-163-086-00	s	CAP, CHIP CERAMIC 3pF +-0.25pF 50V
1-163-087-00	s	CAP, CHIP CERAMIC 4pF +-0.25pF 50V
1-163-088-00	s	CAP, CHIP CERAMIC 5pF +-0.25pF 50V
1-163-089-00	s	CAP, CHIP CERAMIC 6pF +-0.25pF 50V
1-163-090-00	s	CAP, CHIP CERAMIC 7pF +-0.25pF 50V
1-163-091-00	s	CAP, CHIP CERAMIC 8pF +-0.25pF 50V
1-163-092-00	s	CAP, CHIP CERAMIC 9pF +-0.25pF 50V
1-163-093-00	s	CAP, CHIP CERAMIC 10pF +-0.25pF 50V
1-163-094-00	s	CAP, CHIP CERAMIC 11pF 5% 50V
1-163-095-00	s	CAP, CHIP CERAMIC 12pF 5% 50V
1-163-096-00	s	CAP, CHIP CERAMIC 13pF 5% 50V
1-163-097-00	s	CAP, CHIP CERAMIC 15pF 5% 50V
1-163-098-00	s	CAP, CHIP CERAMIC 16pF 5% 50V
1-163-099-00	s	CAP, CHIP CERAMIC 18pF 5% 50V
1-163-100-00	s	CAP, CHIP CERAMIC 20pF 5% 50V
1-163-101-00	s	CAP, CHIP CERAMIC 22pF 5% 50V
1-163-102-00	s	CAP, CHIP CERAMIC 24pF 5% 50V
1-163-103-00	s	CAP, CHIP CERAMIC 27pF 5% 50V
1-163-104-00	s	CAP, CHIP CERAMIC 30pF 5% 50V
1-163-105-00	s	CAP, CHIP CERAMIC 33pF 5% 50V
1-163-106-00	s	CAP, CHIP CERAMIC 36pF 5% 50V
1-163-107-00	s	CAP, CHIP CERAMIC 39pF 5% 50V
1-163-108-00	s	CAP, CHIP CERAMIC 43pF 5% 50V
1-163-109-00	s	CAP, CHIP CERAMIC 47pF 5% 50V
1-163-110-00	s	CAP, CHIP CERAMIC 51pF 5% 50V
1-163-111-00	s	CAP, CHIP CERAMIC 56pF 5% 50V
1-163-112-00	s	CAP, CHIP CERAMIC 62pF 5% 50V
1-163-113-00	s	CAP, CHIP CERAMIC 68pF 5% 50V
1-163-114-00	s	CAP, CHIP CERAMIC 75pF 5% 50V
1-163-115-00	s	CAP, CHIP CERAMIC 82pF 5% 50V
1-163-116-00	s	CAP, CHIP CERAMIC 91pF 5% 50V
1-163-117-00	s	CAP, CHIP CERAMIC 100pF 5% 50V
1-163-118-00	s	CAP, CHIP CERAMIC 110pF 5% 50V
1-163-119-00	s	CAP, CHIP CERAMIC 120pF 5% 50V
1-163-120-00	s	CAP, CHIP CERAMIC 130pF 5% 50V
1-163-121-00	s	CAP, CHIP CERAMIC 150pF 5% 50V
1-163-122-00	s	CAP, CHIP CERAMIC 160pF 5% 50V
1-163-123-00	s	CAP, CHIP CERAMIC 180pF 5% 50V
1-163-124-00	s	CAP, CHIP CERAMIC 200pF 5% 50V
1-163-125-00	s	CAP, CHIP CERAMIC 220pF 5% 50V
1-163-126-00	s	CAP, CHIP CERAMIC 240pF 5% 50V
1-163-127-00	s	CAP, CHIP CERAMIC 270pF 5% 50V
1-163-128-00	s	CAP, CHIP CERAMIC 300pF 5% 50V
1-163-129-00	s	CAP, CHIP CERAMIC 330pF 5% 50V
1-163-130-00	s	CAP, CHIP CERAMIC 360pF 5% 50V

CAPACITOR, CHIP CERAMIC

Part No.	SP	Description
1-163-131-00	s	CAP, CHIP CERAMIC 390pF 5% 50V
1-163-132-00	s	CAP, CHIP CERAMIC 430pF 5% 50V
1-163-133-00	s	CAP, CHIP CERAMIC 470pF 5% 50V
1-163-134-00	s	CAP, CHIP CERAMIC 510pF 5% 50V
1-163-135-00	s	CAP, CHIP CERAMIC 560pF 5% 50V
1-163-136-00	s	CAP, CHIP CERAMIC 620pF 5% 50V
1-163-137-00	s	CAP, CHIP CERAMIC 680pF 5% 50V
1-163-138-00	s	CAP, CHIP CERAMIC 750pF 5% 50V
1-163-139-00	s	CAP, CHIP CERAMIC 820pF 5% 50V
1-163-140-00	s	CAP, CHIP CERAMIC 910pF 5% 50V
1-163-141-00	s	CAP, CHIP CERAMIC 1000pF 5% 50V
1-163-142-00	s	CAP, CHIP CERAMIC 1100pF 5% 50V
1-163-143-00	s	CAP, CHIP CERAMIC 1200pF 5% 50V
1-163-144-00	s	CAP, CHIP CERAMIC 1300pF 5% 50V
1-163-145-00	s	CAP, CHIP CERAMIC 1500pF 10% 50V
1-163-012-00	s	CAP, CHIP CERAMIC 1800pF 10% 50V
1-164-161-11	s	CAP, CHIP CERAMIC 2200pF 10% 100V
1-163-014-00	s	CAP, CHIP CERAMIC 2700pF 10% 50V
1-164-182-11	s	CAP, CHIP CERAMIC 3300pF 10% 100V
1-163-016-00	s	CAP, CHIP CERAMIC 3900pF 10% 50V
1-163-017-00	s	CAP, CHIP CERAMIC 4700pF 10% 50V
1-163-018-00	s	CAP, CHIP CERAMIC 5600pF 10% 50V
1-163-019-00	s	CAP, CHIP CERAMIC 6800pF 10% 50V
1-163-020-00	s	CAP, CHIP CERAMIC 8200pF 10% 50V
1-164-232-11	s	CAP, CHIP CERAMIC 0.01 10% 100V
1-163-022-00	s	CAP, CHIP CERAMIC 0.012 10% 50V
1-163-023-00	s	CAP, CHIP CERAMIC 0.015 10% 50V
1-163-024-00	s	CAP, CHIP CERAMIC 0.018 10% 50V
1-163-033-00	s	CAP, CHIP CERAMIC 0.022 50V
1-163-986-00	s	CAP, CHIP CERAMIC 0.027 10% 25V
1-163-034-00	s	CAP, CHIP CERAMIC 0.033 50V
1-162-587-11	s	CAP, CHIP CERAMIC 0.039 10% 25V
1-163-035-00	s	CAP, CHIP CERAMIC 0.047 50V
1-164-343-11	s	CAP, CHIP CERAMIC 0.056 10% 25V
1-163-036-00	s	CAP, CHIP CERAMIC 0.068 50V
1-164-345-11	s	CAP, CHIP CERAMIC 0.082 10% 25V
1-163-038-00	s	CAP, CHIP CERAMIC 0.1 50V
1-164-492-11	s	CAP, CHIP CERAMIC 0.15 10% 16V
1-164-222-11	s	CAP, CHIP CERAMIC 0.22 25V
1-164-336-11	s	CAP, CHIP CERAMIC 0.33 25V
1-164-005-11	s	CAP, CHIP CERAMIC 0.47 25V
1-164-700-11	s	CAP, CHIP CERAMIC 0.68 16V

RESISTOR, CHIP

Part No.	SP	Description
1-216-295-00	s	RES, CHIP 0 5% 1/10W
1-216-298-00	s	RES, CHIP 2.2 5% 1/10W
1-216-302-00	s	RES, CHIP 2.7 5% 1/10W
1-216-304-11	s	RES, CHIP 3.3 5% 1/10W
1-216-306-11	s	RES, CHIP 3.9 5% 1/10W
1-216-308-00	s	RES, CHIP 4.7 5% 1/10W
1-216-309-00	s	RES, CHIP 5.6 5% 1/10W
1-216-311-00	s	RES, CHIP 6.8 5% 1/10W
1-216-313-00	s	RES, CHIP 8.2 5% 1/10W
1-216-001-00	s	RES, CHIP 10 5% 1/10W
1-216-003-11	s	RES, CHIP 12 5% 1/10W
1-216-005-00	s	RES, CHIP 15 5% 1/10W
1-216-007-00	s	RES, CHIP 18 5% 1/10W
1-216-009-00	s	RES, CHIP 22 5% 1/10W
1-216-011-00	s	RES, CHIP 27 5% 1/10W
1-216-013-00	s	RES, CHIP 33 5% 1/10W
1-216-015-00	s	RES, CHIP 39 5% 1/10W
1-216-017-00	s	RES, CHIP 47 5% 1/10W
1-216-019-00	s	RES, CHIP 56 5% 1/10W
1-216-021-00	s	RES, CHIP 68 5% 1/10W
1-216-023-00	s	RES, CHIP 82 5% 1/10W
1-216-025-00	s	RES, CHIP 100 5% 1/10W
1-216-027-00	s	RES, CHIP 120 5% 1/10W
1-216-029-00	s	RES, CHIP 150 5% 1/10W
1-216-031-00	s	RES, CHIP 180 5% 1/10W
1-216-033-00	s	RES, CHIP 220 5% 1/10W
1-216-035-00	s	RES, CHIP 270 5% 1/10W
1-216-037-00	s	RES, CHIP 330 5% 1/10W
1-216-039-00	s	RES, CHIP 390 5% 1/10W
1-216-041-00	s	RES, CHIP 470 5% 1/10W
1-216-043-00	s	RES, CHIP 560 5% 1/10W
1-216-045-00	s	RES, CHIP 680 5% 1/10W
1-216-047-00	s	RES, CHIP 820 5% 1/10W
1-216-049-00	s	RES, CHIP 1k 5% 1/10W
1-216-051-00	s	RES, CHIP 1.2k 5% 1/10W
1-216-053-00	s	RES, CHIP 1.5k 5% 1/10W
1-216-055-00	s	RES, CHIP 1.8k 5% 1/10W
1-216-057-00	s	RES, CHIP 2.2k 5% 1/10W
1-216-059-00	s	RES, CHIP 2.7k 5% 1/10W
1-216-061-00	s	RES, CHIP 3.3k 5% 1/10W
1-216-063-00	s	RES, CHIP 3.9k 5% 1/10W
1-216-065-00	s	RES, CHIP 4.7k 5% 1/10W
1-216-067-00	s	RES, CHIP 5.6k 5% 1/10W
1-216-069-00	s	RES, CHIP 6.8k 5% 1/10W
1-216-071-00	s	RES, CHIP 8.2k 5% 1/10W
1-216-073-00	s	RES, CHIP 10k 5% 1/10W
1-216-075-00	s	RES, CHIP 12k 5% 1/10W
1-216-077-00	s	RES, CHIP 15k 5% 1/10W
1-216-079-00	s	RES, CHIP 18k 5% 1/10W
1-216-081-00	s	RES, CHIP 22k 5% 1/10W
1-216-083-00	s	RES, CHIP 27k 5% 1/10W
1-216-085-00	s	RES, CHIP 33k 5% 1/10W
1-216-748-11	s	RES, CHIP 39k 5% 1/10W
1-216-089-00	s	RES, CHIP 47k 5% 1/10W
1-216-091-00	s	RES, CHIP 56k 5% 1/10W

RESISTOR, CHIP

Part No.	SP	Description
1-216-093-00	s	RES, CHIP 68k 5% 1/10W
1-216-095-00	s	RES, CHIP 82k 5% 1/10W
1-216-097-00	s	RES, CHIP 100k 5% 1/10W
1-216-099-00	s	RES, CHIP 120k 5% 1/10W
1-216-101-00	s	RES, CHIP 150k 5% 1/10W
1-216-103-00	s	RES, CHIP 180k 5% 1/10W
1-216-105-00	s	RES, CHIP 220k 5% 1/10W
1-216-107-00	s	RES, CHIP 270k 5% 1/10W
1-216-109-00	s	RES, CHIP 330k 5% 1/10W
1-216-111-00	s	RES, CHIP 390k 5% 1/10W
1-216-113-00	s	RES, CHIP 470k 5% 1/10W
1-216-115-00	s	RES, CHIP 560k 5% 1/10W
1-216-117-00	s	RES, CHIP 680k 5% 1/10W
1-216-119-00	s	RES, CHIP 820k 5% 1/10W
1-216-121-00	s	RES, CHIP 1.0M 5% 1/10W
1-216-123-11	s	RES, CHIP 1.2M 5% 1/10W
1-216-125-00	s	RES, CHIP 1.5M 5% 1/10W
1-216-127-11	s	RES, CHIP 1.8M 5% 1/10W
1-216-129-00	s	RES, CHIP 2.2M 5% 1/10W
1-216-131-11	s	RES, CHIP 2.7M 5% 1/10W
1-216-133-00	s	RES, CHIP 3.3M 5% 1/10W

AT-78 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-903-A	o	MOUNTED CIRCUIT BOARD, AT-78
1pc	3-168-353-01	o	BRACKET (UPPER), AT
1pc	3-168-354-01	o	BRACKET (LOWER), AT
1pc	3-179-914-01	o	PLATE, SHIELD, AT
1pc	3-717-900-01	s	KNOB (A) (TC), SW
1pc	7-621-772-18	s	SCREW +B 2X4
BT1	1-550-414-31	s	HOLDER, BATTERY
C1	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C2	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C3	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C4	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C5	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C6	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C7	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C8	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C9	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C10	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C11	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C12	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C13	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C14	1-163-239-11	s	CERAMIC 33PF 5% 50V
C16	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C17	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C18	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C19	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C21	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C22	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C26	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C27	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C28	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C30	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C32	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C35	1-135-214-21	s	TANTALUM 4.7uF 10% 20V
C36	1-135-214-21	s	TANTALUM 4.7uF 10% 20V
C37	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C38	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C39	1-135-164-21	s	TANTALUM, CHIP 22uF 20% 10V
C40	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C42	1-135-214-21	s	TANTAL 4.7uF 20% 20V
C43	1-135-214-21	s	TANTAL 4.7uF 20% 20V
C47	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C48	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C49	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C50	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C51	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C52	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C53	1-135-159-21	s	TANTALUM, CHIP 10uF 10% 20V
C55	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C57	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C58	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C59	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C60	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C61	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C63	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C71	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C72	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C73	1-130-489-00	s	FILM 0.033uF 5% 50V

(AT-78 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C74	1-163-239-11	s	CERAMIC 33PF 5% 50V
C76	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C77	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C80	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C81	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
CN1	1-569-031-21	s	CONNECTOR, 25P
CN2	1-569-031-21	s	CONNECTOR, 25P
CN3	1-564-005-11	o	CONNECTOR 6P, MALE
CN4	1-506-487-11	o	CONNECTOR, 8P, MALE
CV1	1-141-368-11	s	CAP, CHIP TRIMMER
D1	8-719-400-18	s	DIODE MA152WK
D2	8-719-800-76	s	DIODE 1SS226
D3	8-719-800-76	s	DIODE 1SS226
D4	8-719-400-18	s	DIODE MA152WK
D6	8-719-400-18	s	DIODE MA152WK
D7	8-719-400-18	s	DIODE MA152WK
D8	8-719-400-18	s	DIODE MA152WK
D9	8-719-400-18	s	DIODE MA152WK
D10	8-719-105-90	s	DIODE RD5.6M-B1
D11	8-719-105-99	s	DIODE RD6.2M-B1
D12	8-719-400-18	s	DIODE MA152WK
D13	8-719-800-76	s	DIODE 1SS226
D14	8-719-800-76	s	DIODE 1SS226
D15	8-719-400-18	s	DIODE MA152WK
D17	8-719-017-42	s	DIODE HSM88WA
D18	8-719-017-42	s	DIODE HSM88WA
D19	8-719-017-42	s	DIODE HSM88WA
D20	8-719-400-18	s	DIODE MA152WK
D21	8-719-104-34	s	DIODE 1S2836
D22	8-719-400-18	s	DIODE MA152WK
IC1	8-759-071-41	s	IC CXD8154BM
IC2	8-759-065-20	s	IC RTC-4553B
IC3	8-759-080-93	s	IC M6M80041FP
IC4	8-759-163-77	s	IC UPD6451AGT-301
IC5	8-759-209-57	s	IC TC4S69F
IC6	8-759-080-93	s	IC M6M80041FP
IC7	8-759-035-93	s	IC TC7S32F
IC9	8-759-035-90	s	IC SC7S02FEL
IC10	8-759-035-90	s	IC SC7S02FEL
IC11	8-759-035-93	s	IC TC7S32F
IC13	8-759-234-20	s	IC TC7S08F
IC14	8-759-234-20	s	IC TC7S08F
IC15	8-759-009-05	s	IC MC14051BF
IC16	8-759-169-19	s	IC HD6305Y0E91F
IC17	8-759-918-65	s	IC TL7700CPS
IC18	8-759-009-05	s	IC MC14051BF
IC19	8-759-101-12	s	IC UPC311G2
IC20	8-759-635-27	s	IC M62352GP
IC21	8-759-300-71	s	IC MC14053BF
IC22	8-759-906-54	s	IC TL064CNS
IC23	8-759-009-06	s	IC MC14052BF
IC24	8-759-906-54	s	IC TL064CNS
IC25	8-759-300-71	s	IC MC14053BF
IC26	8-759-981-65	s	IC LM2903M
IC27	8-759-209-57	s	IC TC4S69F
IC28	8-759-926-62	s	IC SN74HC365ANS
IC29	8-759-209-57	s	IC TC4S69F
IC30	8-759-209-15	s	IC TC4SU69F

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(AT-78 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC31	8-759-300-71	s	IC MC14053BF
IC32	8-759-906-54	s	IC TL064CNS
IC33	8-759-981-65	s	IC LM2903M
IC34	8-759-209-97	s	IC TC4S81F
L1	1-408-785-21	s	INDUCTOR, CHIP 47uH
L2	1-408-785-21	s	INDUCTOR, CHIP 47uH
L3	1-410-711-31	s	INDUCTOR, CHIP 33uH
L4	1-408-786-21	s	INDUCTOR, CHIP 56uH
L5	1-410-711-31	s	INDUCTOR, CHIP 33uH
L6	1-408-797-11	s	CHIP 470uH
L7	1-408-797-11	s	CHIP 470uH
L8	1-408-785-21	s	INDUCTOR, CHIP 47uH
L9	1-408-785-21	s	INDUCTOR, CHIP 47uH
Q1	8-729-402-19	s	TRANSISTOR XN6501
Q2	8-729-402-19	s	TRANSISTOR XN6501
Q3	8-729-402-19	s	TRANSISTOR XN6501
Q4	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q5	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q6	8-729-402-78	s	TRANSISTOR XN6401
Q8	8-729-402-84	s	TRANSISTOR XN4601
Q9	8-729-109-44	s	TRANSISTOR 2SK94
Q10	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q11	8-729-800-37	s	TRANSISTOR 2SD1048-X7
Q12	8-729-807-87	s	TRANSISTOR 2SB1295-UL6
Q13	8-729-216-22	s	TRANSISTOR 2SA1162
Q14	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q15	8-729-402-19	s	TRANSISTOR XN6501
Q16	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q17	8-729-216-22	s	TRANSISTOR 2SA1162
Q18	8-729-109-44	s	TRANSISTOR 2SK94
Q19	8-729-109-44	s	TRANSISTOR 2SK94
Q20	8-729-109-44	s	TRANSISTOR 2SK94
R7	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R41	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R42	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R45	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R46	1-216-697-11	s	METAL, CHIP 82K 0.5% 1/10W
R47	1-216-697-11	s	METAL, CHIP 82K 0.5% 1/10W
R48	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R49	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R50	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R51	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R52	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R53	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R54	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R55	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R81	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R84	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R107	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R108	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R111	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R112	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R121	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R175	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R176	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R188	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R189	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R190	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W

(AT-78 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R203	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R204	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R205	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R214	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R217	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R219	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
RB1	1-231-387-00	s	COMPOSITION CIRCUIT BLOCK
RV4	1-237-035-11	s	RES, ADJ, METAL 5K
RV5	1-237-034-11	s	RES, ADJ, METAL 2K
RV6	1-237-518-21	s	RES, ADJ, METAL 10K
RV7	1-237-518-21	s	RES, ADJ, METAL 10K
RV8	1-237-037-11	s	RES, ADJ, METAL 20K
RV9	1-237-035-11	s	RES, ADJ, METAL 5K
S1	1-570-859-11	s	SWITCH, SLIDE
S2	1-571-787-31	s	SWITCH, TACTILE
S4	1-571-404-11	s	SWITCH, KEY BOARD
S5	1-570-851-11	s	SWITCH, SLIDE
S6	1-570-851-11	s	SWITCH, SLIDE
S7	1-570-859-11	s	SWITCH, SLIDE
S8	1-570-859-11	s	SWITCH, SLIDE
S9	1-570-859-11	s	SWITCH, SLIDE
S10	1-570-859-11	s	SWITCH, SLIDE
S11	1-571-275-31	s	SWITCH, SLIDE
S12	1-570-859-11	s	SWITCH, SLIDE
S13	1-570-851-11	s	SWITCH, SLIDE
S14	1-571-275-31	s	SWITCH, SLIDE
S15	1-570-859-11	s	SWITCH, SLIDE
S16	1-571-275-31	s	SWITCH, SLIDE
S17	1-571-275-31	s	SWITCH, SLIDE
X1	1-579-216-11	s	VIBRATOR, CERAMIC 4.0MHz

CN-439 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-638-047-12	o	PRINTED CIRCUIT BOARD CN-439
CN1	1-566-260-21	o	CONNECTOR, BOARD TO BOARD 14P
CN2	1-566-260-21	o	CONNECTOR, BOARD TO BOARD 14P
CN3	1-566-098-11	o	CONNECTOR, BOARD TO BOARD 14P
CN4	1-566-098-11	o	CONNECTOR, BOARD TO BOARD 14P

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

EN-95A BOARD (including CN-439 board)

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-936-A	o	MOUNTED CIRCUIT BOARD, EN-95A (U) [for DXC-537A(UC)]
1pc	A-8271-937-A	o	MOUNTED CIRCUIT BOARD, EN-95A [for DXC-537A(J)]
1pc	A-8271-938-A	o	MOUNTED CIRCUIT BOARD, EN-95A (P) [for DXC-537AP(EK)]
1pc	2-280-622-41	o	SUPPORT (M3), HEXAGON
1pc	7-682-546-04	s	SCREW +B 3X5
C1	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C2	1-163-239-11	s	CERAMIC 33PF 5% 50V
C3	1-163-239-11	s	CERAMIC 33PF 5% 50V
C4	1-126-393-11	s	ELECT 33uF 20% 10V
C5	1-135-158-21	s	TANTALUM 15uF 10% 4V
C6	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C7	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C8	1-135-181-21	s	TANTAL 4.7uF 10% 6.3V
C9	1-163-239-11	s	CERAMIC 33PF 5% 50V
C10	1-163-239-11	s	CERAMIC 33PF 5% 50V
C11	1-126-393-11	s	ELECT 33uF 20% 10V
C12	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C13	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C14	1-135-181-21	s	TANTAL 4.7uF 10% 6.3V
C15	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C16	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V [for DXC-537AP(EK)]
C19	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V [for DXC-537AP(EK)]
C20	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V [for DXC-537AP(EK)]
C21	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C22	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C23	1-163-224-11	s	CERAMIC, CHIP 7PF 0.25PF 50V
C24	1-126-393-11	s	ELECT 33uF 20% 10V
C25	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C26	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C28	1-163-220-11	s	CERAMIC 3PF 0.25PF 50V
C30	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C31	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C33	1-163-239-11	s	CERAMIC 33PF 5% 50V [for DXC-537A(J,UC)]
C36	1-126-393-11	s	ELECT 33uF 20% 10V
C37	1-126-393-11	s	ELECT 33uF 20% 10V
C44	1-126-176-11	s	ELECT 220uF 20% 10V
C46	1-126-393-11	s	ELECT 33uF 20% 10V
C47	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V [for DXC-537AP(EK)]
C48	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C49	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V [for DXC-537AP(EK)]
C50	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C51	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V [for DXC-537AP(EK)]
C52	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C53	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C55	1-163-239-11	s	CERAMIC 33PF 5% 50V [for DXC-537A(J,UC)]
C57	1-135-162-21	s	TANTALUM, CHIP 33uF 10% 6.3V
C58	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C59	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C60	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C61	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V

(EN-95A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C64	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C65	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C66	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C67	1-126-393-11	s	ELECT 33uF 20% 10V
C70	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C71	1-126-393-11	s	ELECT 33uF 20% 10V
C72	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C76	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C77	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C78	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C80	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C82	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C83	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C84	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C85	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C87	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C90	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C91	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C94	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
CN1	1-565-780-11	o	CONNECTOR,TX(P.L)(PC BOARD)50P
D1	8-719-800-76	s	DIODE 1SS2260ARD TO BOARD 14P
D3	8-719-800-76	s	DIODE 1SS2260 BOARD 14P
DL1	1-415-813-11	s	DELAY LINE
FL1	1-235-161-00	s	FILTER, BANDPASS 3.58MHz [for DXC-537A(J,UC)]
FL1	1-235-181-00	s	FILTER, BANDPASS 4.43MHz [for DXC-537AP(EK)]
IC1	8-759-906-59	s	IC CX22017
IC2	8-759-925-74	s	IC SN74HC04ANS
IC3	8-759-209-15	s	IC TC4SU69F [for DXC-537AP(EK)]
IC4	8-759-700-07	s	IC NJM2903M
IC5	8-759-907-21	s	IC CX-7969
IC6	8-759-911-77	s	IC CX-7968A
IC8	8-759-234-20	s	IC TC7S08F
IC9	8-759-710-24	s	IC NJM319M
IC10	8-759-209-15	s	IC TC4SU69F
L1	1-408-785-21	s	INDUCTOR, CHIP 47uH
L2	1-408-795-21	s	CHIP 330uH
L3	1-408-795-21	s	CHIP 330uH
L4	1-408-785-21	s	INDUCTOR, CHIP 47uH
L6	1-408-785-21	s	INDUCTOR, CHIP 47uH
L8	1-408-785-21	s	INDUCTOR, CHIP 47uH
L9	1-408-788-21	s	INDUCTOR, CHIP 82uH [for DXC-537A(J,UC)]
L9	1-408-791-00	s	CHIP 150uH [for DXC-537AP(EK)]
L10	1-408-783-00	s	CHIP 33uH
L12	1-408-785-21	s	INDUCTOR, CHIP 47uH
L14	1-408-783-00	s	CHIP 33uH
LV1	1-408-844-00	s	INDUCTOR, VAR, 22uH
Q1	8-729-402-19	s	TRANSISTOR XN6501
Q2	8-729-402-19	s	TRANSISTOR XN6501
Q4	8-729-402-19	s	TRANSISTOR XN6501

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(EN-95A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q5	8-729-402-19	s	TRANSISTOR XN6501
Q7	8-729-402-19	s	TRANSISTOR XN6501
Q8	8-729-402-19	s	TRANSISTOR XN6501
Q9	8-729-402-19	s	TRANSISTOR XN6501
Q10	8-729-122-63	s	TRANSISTOR 2SA1226
Q11	8-729-402-19	s	TRANSISTOR XN6501
Q12	8-729-402-78	s	TRANSISTOR XN6401
Q13	8-729-402-84	s	TRANSISTOR XN4601
Q14	8-729-216-22	s	TRANSISTOR 2SA1162
Q15	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q16	8-729-403-32	s	TRANSISTOR XN6534
Q17	8-729-403-32	s	TRANSISTOR XN6534
Q18	8-729-216-22	s	TRANSISTOR 2SA1162
Q19	8-729-402-19	s	TRANSISTOR XN6501
Q20	8-729-402-78	s	TRANSISTOR XN6401
Q22	8-729-403-32	s	TRANSISTOR XN6534
Q24	8-729-402-19	s	TRANSISTOR XN6501
Q25	8-729-402-78	s	TRANSISTOR XN6401
Q27	8-729-403-29	s	TRANSISTOR XN6435
Q28	8-729-402-84	s	TRANSISTOR XN4601
Q29	8-729-403-29	s	TRANSISTOR XN6435
Q30	8-729-402-78	s	TRANSISTOR XN6401
Q31	8-729-402-78	s	TRANSISTOR XN6401
Q32	8-729-402-84	s	TRANSISTOR XN4601
Q33	8-729-216-22	s	TRANSISTOR 2SA1162
Q34	8-729-402-19	s	TRANSISTOR XN6501
Q35	8-729-402-19	s	TRANSISTOR XN6501
Q36	8-729-216-22	s	TRANSISTOR 2SA1162
Q37	8-729-402-78	s	TRANSISTOR XN6401
Q38	8-729-402-19	s	TRANSISTOR XN6501
Q39	8-729-402-19	s	TRANSISTOR XN6501
Q40	8-729-216-22	s	TRANSISTOR 2SA1162
Q41	8-729-402-78	s	TRANSISTOR XN6401
Q42	8-729-402-19	s	TRANSISTOR XN6501
Q43	8-729-402-19	s	TRANSISTOR XN6501
Q44	8-729-216-22	s	TRANSISTOR 2SA1162
Q45	8-729-402-78	s	TRANSISTOR XN6401
Q46	8-729-402-19	s	TRANSISTOR XN6501
Q47	8-729-402-84	s	TRANSISTOR XN4601
Q48	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q49	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q50	8-729-402-84	s	TRANSISTOR XN4601
R1	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R2	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R3	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R5	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R9	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R13	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R14	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R15	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R16	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R17	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R18	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R21	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R22	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W [for DXC-537AP(EK)]
R27	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R28	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W

(EN-95A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R29	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R33	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R36	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W [for DXC-537A(J,UC)]
R37	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R38	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W [for DXC-537A(J,UC)]
R38	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W [for DXC-537AP(EK)]
R42	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R43	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R47	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R48	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R49	1-216-660-11	s	METAL, CHIP 2.4K 0.5% 1/10W
R51	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R66	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R67	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R69	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R71	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R72	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R73	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W [for DXC-537A(J,UC)]
R73	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W [for DXC-537AP(EK)]
R76	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W
R77	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R78	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R89	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R90	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R93	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W [for DXC-537A(J,UC)]
R93	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W [for DXC-537AP(EK)]
R94	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R95	1-216-693-11	s	METAL, CHIP 56K 0.5% 1/10W
R96	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R97	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W [for DXC-537A(J,UC)]
R97	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W [for DXC-537AP(EK)]
R104	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R105	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W [for DXC-537A(J,UC)]
R107	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R108	1-216-660-11	s	METAL, CHIP 2.4K 0.5% 1/10W
R109	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R110	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R111	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W [for DXC-537A(J,UC)]
R112	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R115	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R118	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R119	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W [for DXC-537A(J,UC)]
R119	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W [for DXC-537AP(EK)]
R123	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R127	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R128	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R139	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W
R144	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(EN-95A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
			[for DXC-537A(J,UC)]
R144	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W [for DXC-537AP(EK)]
R145	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W [for DXC-537A(J,UC)]
R145	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W [for DXC-537AP(EK)]
R146	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W [for DXC-537A(J,UC)]
R146	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W [for DXC-537AP(EK)]
R147	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W [for DXC-537A(J,UC)]
R147	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W [for DXC-537AP(EK)]
R153	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R159	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W [for DXC-537A(J,UC)]
R159	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W [for DXC-537AP(EK)]
R160	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W [for DXC-537A(J,UC)]
R160	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W [for DXC-537AP(EK)]
R161	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W [for DXC-537A(J,UC)]
R161	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W [for DXC-537AP(EK)]
R162	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W [for DXC-537A(J,UC)]
R162	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W [for DXC-537AP(EK)]
R169	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R173	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W [for DXC-537A(J,UC)]
R173	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W [for DXC-537AP(EK)]
R174	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W [for DXC-537A(J,UC)]
R174	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W [for DXC-537AP(EK)]
R175	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W [for DXC-537A(J,UC)]
R175	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W [for DXC-537AP(EK)]
R176	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W [for DXC-537A(J,UC)]
R176	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W [for DXC-537AP(EK)]
R183	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R202	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R203	1-216-631-11	s	METAL, CHIP 150 0.5% 1/10W
R204	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R231	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R233	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R237	1-218-754-11	s	METAL 120K 0.50% 1/10W [for DXC-537A(J,UC)]
R237	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W [for DXC-537AP(EK)]
R238	1-218-754-11	s	METAL 120K 0.50% 1/10W [for DXC-537A(J,UC)]
R238	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W [for DXC-537AP(EK)]

(EN-95A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R239	1-218-754-11	s	METAL 120K 0.50% 1/10W [for DXC-537A(J,UC)]
R239	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W [for DXC-537AP(EK)]
R240	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R241	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
RV1	1-241-263-11	s	RES, ADJ, METAL 5K
RV2	1-237-033-11	s	RES, ADJ, METAL 1K
RV3	1-237-035-11	s	RES, ADJ, METAL 5K [for DXC-537AP(EK)]
RV4	1-241-263-11	s	RES, ADJ, METAL 5K
RV5	1-237-033-11	s	RES, ADJ, METAL 1K
RV6	1-237-032-11	s	RES, ADJ, METAL 500
RV7	1-241-262-11	s	RES, ADJ, METAL 2K
RV8	1-241-260-11	s	RES, ADJ, METAL 500
RV9	1-241-265-11	s	RES, ADJ, METAL 20K [for DXC-537A(J,UC)]
RV10	1-237-035-11	s	RES, ADJ, METAL 5K
RV11	1-241-261-41	s	RES, ADJ, METAL 1K
RV12	1-237-032-11	s	RES, ADJ, METAL 500
RV13	1-237-037-11	s	RES, ADJ, METAL 20K [for DXC-537A(J,UC)]
RV13	1-237-033-11	s	RES, ADJ, METAL 1K [for DXC-537AP(EK)]
RV14	1-237-037-11	s	RES, ADJ, METAL 20K [for DXC-537A(J,UC)]
RV14	1-237-033-11	s	RES, ADJ, METAL 1K [for DXC-537AP(EK)]
RV15	1-237-037-11	s	RES, ADJ, METAL 20K [for DXC-537A(J,UC)]
RV15	1-237-033-11	s	RES, ADJ, METAL 1K [for DXC-537AP(EK)]
RV16	1-241-264-11	s	RES, ADJ, METAL 10K
RV17	1-241-260-11	s	RES, ADJ, METAL 500
RV18	1-241-260-11	s	RES, ADJ, METAL 500
S1	1-570-853-11	s	SWITCH, SLIDE [for DXC-537A(J,UC)]
S2	1-570-863-11	s	SWITCH, SLIDE

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

IE-40 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-904-A	o	MOUNTED CIRCUIT BOARD, IE-40 (N) [for DXC-537A(J,UC)]
1pc	A-8271-911-A	o	MOUNTED CIRCUIT BOARD, IE-40 (P) [for DXC-537AP(EK)]
C1	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C2	1-164-156-11	s	CERAMIC 0.1uF 25V
C3	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C4	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C5	1-164-156-11	s	CERAMIC 0.1uF 25V
C6	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C7	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C8	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C9	1-164-156-11	s	CERAMIC 0.1uF 25V
C10	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C11	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C12	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C13	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C14	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C15	1-164-156-11	s	CERAMIC 0.1uF 25V
C16	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C17	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C18	1-164-156-11	s	CERAMIC 0.1uF 25V
C19	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C20	1-164-156-11	s	CERAMIC 0.1uF 25V
C21	1-164-156-11	s	CERAMIC 0.1uF 25V
C22	1-164-156-11	s	CERAMIC 0.1uF 25V
C23	1-164-156-11	s	CERAMIC 0.1uF 25V
C24	1-164-156-11	s	CERAMIC 0.1uF 25V
C25	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C26	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C27	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C28	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C29	1-164-156-11	s	CERAMIC 0.1uF 25V
C31	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C32	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C35	1-164-156-11	s	CERAMIC 0.1uF 25V
C37	1-164-156-11	s	CERAMIC 0.1uF 25V
C38	1-164-156-11	s	CERAMIC 0.1uF 25V
C39	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C41	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C42	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C43	1-164-156-11	s	CERAMIC 0.1uF 25V
C44	1-164-156-11	s	CERAMIC 0.1uF 25V
C45	1-164-156-11	s	CERAMIC 0.1uF 25V
C46	1-135-210-11	s	TANTALUM, CHIP 4.7uF 10% 10V
C47	1-135-210-11	s	TANTALUM, CHIP 4.7uF 10% 10V
C48	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C49	1-164-156-11	s	CERAMIC 0.1uF 25V
C50	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C51	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C52	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C53	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C54	1-164-156-11	s	CERAMIC 0.1uF 25V
C55	1-164-156-11	s	CERAMIC 0.1uF 25V
C56	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C57	1-164-156-11	s	CERAMIC 0.1uF 25V
C58	1-164-156-11	s	CERAMIC 0.1uF 25V
C59	1-164-156-11	s	CERAMIC 0.1uF 25V
C61	1-164-156-11	s	CERAMIC 0.1uF 25V

(IE-40 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C62	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C63	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C64	1-164-156-11	s	CERAMIC 0.1uF 25V
C65	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C66	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C67	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C70	1-164-156-11	s	CERAMIC 0.1uF 25V
C72	1-164-156-11	s	CERAMIC 0.1uF 25V
C73	1-164-156-11	s	CERAMIC 0.1uF 25V
C74	1-135-145-11	s	TANTALUM, CHIP 0.47uF 10% 35V
C75	1-135-145-11	s	TANTALUM, CHIP 0.47uF 10% 35V
C76	1-135-210-11	s	TANTALUM, CHIP 4.7uF 10% 10V
C77	1-135-210-11	s	TANTALUM, CHIP 4.7uF 10% 10V
C78	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C79	1-164-156-11	s	CERAMIC 0.1uF 25V
C81	1-164-156-11	s	CERAMIC 0.1uF 25V
C82	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C83	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C84	1-164-156-11	s	CERAMIC 0.1uF 25V
C85	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C86	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C87	1-164-156-11	s	CERAMIC 0.1uF 25V
C88	1-164-156-11	s	CERAMIC 0.1uF 25V
C89	1-162-917-11	s	CERAMIC, CHIP 15PF 5% 50V
C90	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C91	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C92	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C93	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C94	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C95	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C96	1-164-156-11	s	CERAMIC 0.1uF 25V
C97	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C98	1-164-156-11	s	CERAMIC 0.1uF 25V
C99	1-164-156-11	s	CERAMIC 0.1uF 25V
C101	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C102	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C103	1-164-156-11	s	CERAMIC 0.1uF 25V
C104	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C105	1-128-391-11	s	ELECT 330uF 20% 6.3V
C107	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C108	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C109	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C110	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C111	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C112	1-135-210-11	s	TANTALUM, CHIP 4.7uF 10% 10V
C113	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C114	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C115	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C116	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C117	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C118	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C119	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C120	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C121	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C122	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C123	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C124	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C125	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C126	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(IE-40 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C127	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C128	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C129	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C132	1-135-076-21	s	TANTALUM, CHIP 1uF 10% 35V
C133	1-135-076-21	s	TANTALUM, CHIP 1uF 10% 35V
C135	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
CN2	1-566-270-21	o	CONNECTOR, BOARD TO BOARD 8P
CN3	1-566-276-21	o	CONNECTOR, BOARD TO BOARD 14P
CV1	1-141-448-21	s	CAP, ADJ
CV2	1-141-450-21	s	CAP, ADJ
CV3	1-141-423-61	s	CAP, TRIMMER
D1	8-719-800-76	s	DIODE 1SS226
D2	8-719-800-76	s	DIODE 1SS226
D3	8-719-800-76	s	DIODE 1SS226
D4	8-719-948-47	s	DIODE HSM88AS
D5	8-719-948-47	s	DIODE HSM88AS
D6	8-719-800-76	s	DIODE 1SS226
DL1	1-415-627-31	s	DELAY LINE, ULTRA SONIC [for DXC-537A(J,UC)]
DL1	1-415-628-31	s	DELAY LINE, ULTRA SONIC [for DXC-537AP(EK)]
DL2	1-406-728-21	s	DELAY LINE, LC (35NS)
DL3	1-406-728-21	s	DELAY LINE, LC (35NS)
DL4	1-406-728-21	s	DELAY LINE, LC (35NS)
E1	1-535-877-22	o	CHIP, CHECKER
IC1	8-759-981-51	s	IC RC1496M
IC5	8-759-981-51	s	IC RC1496M
IC6	8-759-300-71	s	IC MC14053BF
IC7	8-759-242-64	s	IC TC4W53F
IC8	8-759-008-86	s	IC MC14017BF
IC9	8-759-009-19	s	IC MC14081BF
IC10	8-759-112-66	s	IC UPC812G2
IC11	8-759-300-71	s	IC MC14053BF
IC12	8-759-030-16	s	IC MC34182M
IC13	8-759-242-64	s	IC TC4W53F
L2	1-408-785-21	s	INDUCTOR, CHIP 47uH
L3	1-410-717-31	s	INDUCTOR, CHIP 100uH
L4	1-408-785-21	s	INDUCTOR, CHIP 47uH
L5	1-410-703-21	s	INDUCTOR, CHIP 6.8uH
L6	1-410-697-21	s	INDUCTOR CHIP 2.2UH
L7	1-408-785-21	s	INDUCTOR, CHIP 47uH
L8	1-408-781-00	s	CHIP 22uH
L9	1-408-781-00	s	CHIP 22uH
L10	1-408-797-11	s	CHIP 470uH
L11	1-410-697-21	s	INDUCTOR CHIP 2.2UH
L12	1-410-697-21	s	INDUCTOR CHIP 2.2UH
L13	1-410-697-21	s	INDUCTOR CHIP 2.2UH
L14	1-410-717-31	s	INDUCTOR, CHIP 100uH
Q1	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q2	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q3	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q4	8-729-905-24	s	TRANSISTOR 2SA1576S
Q5	8-729-905-24	s	TRANSISTOR 2SA1576S
Q6	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q7	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q8	8-729-143-07	s	TRANSISTOR 2SA1610-Y33

(IE-40 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q9	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q10	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q11	8-729-175-73	s	TRANSISTOR 2SC2757
Q12	8-729-175-73	s	TRANSISTOR 2SC2757
Q13	8-729-109-41	s	TRANSISTOR 2SK94-X1
Q14	8-729-175-73	s	TRANSISTOR 2SC2757
Q15	8-729-175-73	s	TRANSISTOR 2SC2757
Q16	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q17	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q18	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q19	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q21	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q22	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q23	8-729-905-24	s	TRANSISTOR 2SA1576S
Q24	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q25	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q26	8-729-109-41	s	TRANSISTOR 2SK94-X1
Q27	8-729-109-41	s	TRANSISTOR 2SK94-X1
Q28	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q29	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q30	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q31	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q32	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q33	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q34	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q35	8-729-109-41	s	TRANSISTOR 2SK94-X1
Q36	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q37	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q38	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q39	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q41	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q42	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q43	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q44	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q45	8-729-109-41	s	TRANSISTOR 2SK94-X1
Q46	8-729-109-41	s	TRANSISTOR 2SK94-X1
Q47	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q48	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q49	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q50	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q51	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q52	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q53	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q54	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q55	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q56	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q57	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q58	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q59	8-729-905-24	s	TRANSISTOR 2SA1576S
Q61	8-729-905-24	s	TRANSISTOR 2SA1576S
Q62	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q63	8-729-905-24	s	TRANSISTOR 2SA1576S
Q64	8-729-905-24	s	TRANSISTOR 2SA1576S
Q65	8-729-905-24	s	TRANSISTOR 2SA1576S
Q66	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q67	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q68	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q69	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q70	8-729-143-13	s	TRANSISTOR 2SC4176-B34

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
Q71	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q72	8-729-905-24	s	TRANSISTOR 2SA1576S
Q73	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q74	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q75	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q76	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q77	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q78	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q79	8-729-905-24	s	TRANSISTOR 2SA1576S
Q80	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q81	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q82	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q83	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q84	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q85	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q86	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q87	8-729-905-24	s	TRANSISTOR 2SA1576S
Q88	8-729-905-24	s	TRANSISTOR 2SA1576S
Q89	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q90	8-729-143-13	s	TRANSISTOR 2SC4176-B34
R1	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R2	1-218-484-11	s	METAL 750 0.50% 1/16W
R4	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R5	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R6	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R7	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R8	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R9	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R10	1-218-668-11	s	METAL 100 0.50% 1/16W
R11	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R12	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R13	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R14	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R15	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R16	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R17	1-218-688-11	s	METAL 680 0.50% 1/16W
R18	1-216-864-11	s	METAL, CHIP 0-OHM
R19	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R21	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R22	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R23	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R24	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R25	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R26	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R27	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R28	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R29	1-218-664-11	s	METAL 68 0.50% 1/16W
R30	1-218-664-11	s	METAL 68 0.50% 1/16W
R31	1-218-720-11	s	METAL 15K 0.50% 1/16W
R32	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R33	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R34	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R35	1-218-688-11	s	METAL 680 0.50% 1/16W
R36	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R37	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R38	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R39	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R41	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R42	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R43	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R44	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R45	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R46	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R47	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R48	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R49	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R50	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R51	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R52	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R53	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R56	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R57	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R58	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R59	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R61	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R62	1-218-732-11	s	METAL 47K 0.50% 1/16W
R63	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R64	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R65	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R66	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R67	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R68	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R69	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R70	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R71	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R72	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R73	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R74	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R75	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R76	1-218-664-11	s	METAL 68 0.50% 1/16W
R77	1-218-664-11	s	METAL 68 0.50% 1/16W
R78	1-218-720-11	s	METAL 15K 0.50% 1/16W
R79	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R81	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R82	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R83	1-218-688-11	s	METAL 680 0.50% 1/16W
R84	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R85	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R86	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R87	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R88	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R89	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R90	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R91	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R92	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R93	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R94	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R95	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R96	1-216-865-11	s	METAL, CHIP 3K 1/16W
R97	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R98	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R99	1-218-732-11	s	METAL 47K 0.50% 1/16W
R101	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R102	1-218-716-11	s	METAL 10K 0.50% 1/16W
R104	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R105	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R106	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R108	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
R109	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R110	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R111	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R112	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R113	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R114	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R116	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R117	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R118	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R119	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R121	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R122	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R123	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R124	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R125	1-218-716-11	s	METAL 10K 0.50% 1/16W
R126	1-218-716-11	s	METAL 10K 0.50% 1/16W
R127	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R128	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R129	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R130	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R131	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R132	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R133	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R134	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R135	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R136	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R137	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R138	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R139	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R141	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R142	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R144	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R145	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R146	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R147	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R148	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R149	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R150	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R151	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R152	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R153	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R154	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R155	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R156	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R157	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R158	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R159	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R161	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R162	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R163	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R164	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R165	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R166	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R167	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R168	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R169	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R170	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R171	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R172	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R173	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R174	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R175	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R176	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R177	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R178	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R179	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R181	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R182	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R183	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R184	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R185	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R186	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R187	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R188	1-218-484-11	s	METAL, CHIP 750 0.50% 1/16W
R189	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R190	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R191	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R192	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R193	1-218-484-11	s	METAL 750 0.50% 1/16W
R194	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R195	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R196	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R197	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R198	1-218-716-11	s	METAL 10K 0.50% 1/16W
R199	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R200	1-218-716-11	s	METAL 10K 0.50% 1/16W
R201	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R202	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R203	1-218-290-11	s	METAL 6.2K 0.50% 1/16W
R204	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R205	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R206	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R207	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R208	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R209	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R210	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R211	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R212	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R213	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R214	1-218-701-11	s	METAL 2.4K 0.50% 1/16W
R215	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R216	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R217	1-218-701-11	s	METAL 2.4K 0.50% 1/16W
R218	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R219	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R220	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R221	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R222	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R223	1-216-864-11	s	METAL, CHIP 0-OHM
R224	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R225	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R226	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R227	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R228	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R229	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R232	1-216-846-11	s	METAL, CHIP 120K 5% 1/16W
R233	1-216-846-11	s	METAL, CHIP 120K 5% 1/16W
R234	1-218-720-11	s	METAL 15K 0.50% 1/16W

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
R235	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R236	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R237	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R238	1-216-864-11	s	METAL, CHIP 0-OHM
R239	1-218-668-11	s	METAL, CHIP 100 0.50% 1/16W
R240	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
RV1	1-237-038-11	s	RES, ADJ, METAL 50K
RV2	1-237-038-11	s	RES, ADJ, METAL 50K
RV3	1-241-262-11	s	RES, ADJ, METAL 2K
RV4	1-237-034-11	s	RES, ADJ, METAL 2K
RV5	1-241-263-11	s	RES, ADJ, METAL 5K
RV6	1-237-032-11	s	RES, ADJ, METAL 500
RV7	1-237-034-11	s	RES, ADJ, METAL 2K
RV8	1-237-035-11	s	RES, ADJ, METAL 5K
RV9	1-237-036-11	s	RES, ADJ, METAL 10K
RV10	1-237-032-11	s	RES, ADJ, METAL 500
RV11	1-237-035-11	s	RES, ADJ, METAL 5K
RV12	1-237-035-11	s	RES, ADJ, METAL 5K
S1	1-572-272-11	s	SWITCH, SLIDE
TP1	1-535-877-22	o	CHIP, CHECKER
TP2	1-535-877-22	o	CHIP, CHECKER
TP3	1-535-877-22	o	CHIP, CHECKER
TP4	1-535-877-22	o	CHIP, CHECKER
TP5	1-535-877-22	o	CHIP, CHECKER
TP6	1-535-877-22	o	CHIP, CHECKER
TP7	1-535-877-22	o	CHIP, CHECKER
TP8	1-535-877-22	o	CHIP, CHECKER
TP9	1-535-877-22	o	CHIP, CHECKER
TP10	1-535-877-22	o	CHIP, CHECKER
TP11	1-535-877-22	o	CHIP, CHECKER
TP12	1-535-877-22	o	CHIP, CHECKER

MB-477 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-883-A	o	MOUNTED CIRCUIT BOARD, MB-477 (N) [for DXC-537A(J,UC)]
1pc	A-8271-909-A	o	MOUNTED CIRCUIT BOARD, MB-477 (P) [for DXC-537AP(EK)]
C4	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C5	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C6	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C7	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C10	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C12	1-135-212-21	s	TANTAL 2.2uF 10% 35V
C13	1-126-947-11	s	ELECT 47uF 20% 35V
C14	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C16	1-135-155-21	s	TANTALUM, CHIP 4.7uF 10% 16V
C17	1-126-375-11	s	ELECT 100uF 20% 25V
C18	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C19	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C20	1-128-225-11	s	ELECT 100uF 25% 10V
C21	1-135-155-21	s	TANTALUM, CHIP 4.7uF 10% 16V
C22	1-135-212-21	s	TANTAL 2.2uF 10% 35V
C26	1-127-499-00	s	ELECT 22uF 20% 16V
C27	1-127-558-11	s	ELECT 10uF 20% 10V
C28	1-162-710-11	s	CERAMIC 100PF 5% 50V
C29	1-162-710-11	s	CERAMIC 100PF 5% 50V
C102	1-124-229-00	s	ELECT 33uF 20% 10V
C104	1-124-229-00	s	ELECT 33uF 20% 10V
C105	1-126-338-11	s	ELECT 47uF 20% 63V
C106	1-137-401-11	s	FILM 0.22uF 5% 100V
C107	1-137-401-11	s	FILM 0.22uF 5% 100V
C108	1-137-306-11	s	FILM 0.1uF 5% 16V
C109	1-137-306-11	s	FILM 0.1uF 5% 16V
C110	1-137-306-11	s	FILM 0.1uF 5% 16V
C111	1-137-306-11	s	FILM 0.1uF 5% 16V
C114	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C115	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C116	1-163-239-11	s	CERAMIC 33PF 5% 50V
C117	1-163-239-11	s	CERAMIC 33PF 5% 50V
C118	1-137-323-11	s	FILM 0.01uF 5% 16V
C119	1-137-323-11	s	FILM 0.01uF 5% 16V
CN1	1-565-781-11	o	CONNECTOR,TX(S.S)(PC BOARD)50P
CN2	1-565-781-11	o	CONNECTOR,TX(S.S)(PC BOARD)50P
CN3	1-562-728-11	o	CONNECTOR, MULTI 50P
CN4	1-506-467-11	o	CONNECTOR, 2P, MALE
CN5	1-564-009-11	o	CONNECTOR 10P, MALE
CN6	1-506-472-11	o	CONNECTOR, 7P, MALE
CN7	1-506-467-11	o	CONNECTOR, 2P, MALE
CN8	1-564-001-11	o	CONNECTOR, 2P, MALE
CN9	1-506-467-11	o	CONNECTOR, 2P, MALE
CN10	1-506-472-11	o	CONNECTOR, 7P, MALE
CN11	1-506-473-11	o	CONNECTOR, 8P, MALE
CN12	1-564-007-11	o	CONNECTOR 8P, MALE
CN13	1-560-364-00	o	CONNECTOR POST HEADER,ILG (2P)
CN14	1-506-467-11	o	CONNECTOR, 2P, MALE
CN15	1-565-819-11	s	CONNECTOR, FPC (DIP TYPE) 25P
CN16	1-565-819-11	s	CONNECTOR, FPC (DIP TYPE) 25P
CN19	1-506-468-11	o	CONNECTOR, 3P, MALE
CN20	1-506-468-11	o	CONNECTOR, 3P, MALE
CN21	1-564-001-11	o	CONNECTOR, 2P, MALE

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(MB-477 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
CN22	1-564-005-11	o	CONNECTOR 6P, MALE
CN23	1-506-469-11	o	CONNECTOR, 4P, MALE
CN24	1-564-002-41	s	CONNECTOR 3P, MALE
CN25	1-506-468-11	o	CONNECTOR, 3P, MALE
CP1	1-467-103-11	s	CONVERTER UNIT, DC-DC
D1	8-719-104-34	s	DIODE 1S2836
D2	8-719-800-76	s	DIODE 1SS226
D3	8-719-911-55	s	DIODE U05G
D4	8-719-104-34	s	DIODE 1S2836
D101	8-719-800-76	s	DIODE 1SS226
D102	8-719-800-76	s	DIODE 1SS226
FL1	1-236-164-11	s	ENCAPSULATED COMPONENT
IC1	8-759-242-64	s	IC TC4W53F
IC3	8-759-234-20	s	IC TC7S08F
IC5	8-759-906-54	s	IC TL064CNS
IC101	8-759-242-64	s	IC TC4W53F
IC102	8-759-981-58	s	IC RC2043MD
IC103	8-759-230-99	s	IC TC74HC4053AF
IC104	8-759-168-93	s	IC TC4SU11F
IC105	8-759-926-95	s	IC SN74HC4020ANS
IC106	8-759-906-53	s	IC TL062CPS
L1	1-408-785-21	s	INDUCTOR, CHIP 47uH
L2	1-408-769-41	s	INDUCTOR, CHIP 2.2uH
L101	1-410-369-11	s	INDUCTOR, CHIP 1uH
L102	1-410-369-11	s	INDUCTOR, CHIP 1uH
L103	1-410-369-11	s	INDUCTOR, CHIP 1uH
L106	1-412-026-11	s	INDUCTOR, CHIP 1uH
L107	1-412-026-11	s	INDUCTOR, CHIP 1uH
L108	1-412-026-11	s	INDUCTOR, CHIP 1uH
Q3	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q4	8-729-175-73	s	TRANSISTOR 2SC2757
Q5	8-729-122-63	s	TRANSISTOR 2SA1226
Q6	8-729-175-73	s	TRANSISTOR 2SC2757
Q8	8-729-104-75	s	TRANSISTOR 2SB799-ML
Q9	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q10	8-729-101-07	s	TRANSISTOR 2SB798
Q11	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q12	8-729-140-75	s	TRANSISTOR 2SD999-CLCK
Q101	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q102	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q103	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q104	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q105	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
R15	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R16	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R34	1-216-693-11	s	METAL, CHIP 56K 0.5% 1/10W
R35	1-216-684-11	s	METAL, CHIP 24K 0.5% 1/10W
R39	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R40	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R42	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R43	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R101	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R102	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R103	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R104	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W

(MB-477 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R107	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R108	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R111	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R112	1-216-676-11	s	METAL, CHIP 11K 0.5% 1/10W
R132	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R133	1-216-611-11	s	METAL, CHIP 22 0.5% 1/10W
R135	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R136	1-216-611-11	s	METAL, CHIP 22 0.5% 1/10W
RV101	1-237-035-11	s	RES, ADJ, METAL 5K
VC01	1-577-181-11	s	OSCILLATOR, CRYSTAL [for DXC-537A(J,UC)]
VC01	1-577-114-11	s	29.5000MHz [for DXC-537AP(EK)]
X1	1-579-953-21	s	OSCILLATOR, CERAMIC 4.096MHZ

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

PR-180 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-905-A	o	MOUNTED CIRCUIT BOARD, PR-180 [for DXC-537A(UC)]
1pc	A-8271-910-A	o	MOUNTED CIRCUIT BOARD, PR-180 [for DXC-537AP(EK)]
1pc	A-8271-912-A	o	MOUNTED CIRCUIT BOARD, PR-180 [for DXC-537A(J)]
C1	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C2	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C3	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C4	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C5	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C6	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C7	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C8	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C9	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C10	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C11	1-135-211-11	s	TANTAL 6.8uF 20% 6.3VW
C12	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C13	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C14	1-164-361-11	s	CERAMIC 0.047uF 16V
C15	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C16	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C17	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C18	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C19	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C20	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C21	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C22	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C23	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C24	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C25	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C26	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C27	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C28	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C29	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C30	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C31	1-135-211-11	s	TANTAL 6.8uF 20% 6.3VW
C32	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C33	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C34	1-164-361-11	s	CERAMIC 0.047uF 16V
C35	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C36	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C37	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C38	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C39	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C40	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C41	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C42	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C43	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C44	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C45	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C46	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C47	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C48	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C49	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C50	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C51	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C52	1-135-211-11	s	TANTAL 6.8uF 20% 6.3VW
C53	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C54	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C55	1-164-361-11	s	CERAMIC 0.047uF 16V
C56	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C57	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C58	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C59	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C60	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C61	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C62	1-135-160-21	s	TANTALUM, CHIP 15uF 10% 16V
C63	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C64	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C65	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C66	1-164-156-11	s	CERAMIC 0.1uF 25V
C67	1-164-156-11	s	CERAMIC 0.1uF 25V
C68	1-164-156-11	s	CERAMIC 0.1uF 25V
C69	1-164-156-11	s	CERAMIC 0.1uF 25V
C70	1-164-156-11	s	CERAMIC 0.1uF 25V
C71	1-164-156-11	s	CERAMIC 0.1uF 25V
C72	1-164-156-11	s	CERAMIC 0.1uF 25V
C73	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C74	1-164-156-11	s	CERAMIC 0.1uF 25V
C75	1-164-156-11	s	CERAMIC 0.1uF 25V
C76	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C77	1-164-156-11	s	CERAMIC 0.1uF 25V
C78	1-164-156-11	s	CERAMIC 0.1uF 25V
C79	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C80	1-164-156-11	s	CERAMIC 0.1uF 25V
C81	1-164-156-11	s	CERAMIC 0.1uF 25V
C82	1-164-156-11	s	CERAMIC 0.1uF 25V
C83	1-164-156-11	s	CERAMIC 0.1uF 25V
C84	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C86	1-164-156-11	s	CERAMIC 0.1uF 25V
C87	1-164-156-11	s	CERAMIC 0.1uF 25V
CN1	1-750-555-11	o	CONNECTOR, BOARD TO BOARD 14P
CN2	1-750-555-11	o	CONNECTOR, BOARD TO BOARD 14P
D1	8-719-104-34	s	DIODE 1S2836
D2	8-719-104-34	s	DIODE 1S2836
D3	8-719-017-42	s	DIODE HSM88WA
D4	8-719-104-34	s	DIODE 1S2836
D5	8-719-104-34	s	DIODE 1S2836
D6	8-719-017-42	s	DIODE HSM88WA
D7	8-719-104-34	s	DIODE 1S2836
D8	8-719-104-34	s	DIODE 1S2836
D9	8-719-017-42	s	DIODE HSM88WA
D10	8-719-800-76	s	DIODE 1SS226
D11	8-719-404-35	s	DIODE MA141WK
DL1	1-406-727-21	s	DELAY LINE, LC (165NS)
DL2	1-406-727-21	s	DELAY LINE, LC (165NS)
DL3	1-406-727-21	s	DELAY LINE, LC (165NS)
E1	1-535-877-22	o	CHIP, CHECKER
IC1	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC2	8-759-906-53	s	IC TL062CPS
IC3	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC4	8-759-906-53	s	IC TL062CPS
IC5	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC6	8-759-906-53	s	IC TL062CPS
IC7	8-759-906-53	s	IC TL062CPS
IC8	8-759-906-53	s	IC TL062CPS

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(PR-180 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC9	8-759-242-64	s	IC TC4W53F
IC10	8-759-906-53	s	IC TL062CPS
IC11	8-759-234-20	s	IC TC7S08F
IC12	8-759-234-20	s	IC TC7S08F
IC13	8-759-906-53	s	IC TL062CPS
Q1	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q2	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q3	8-729-905-24	s	TRANSISTOR 2SA1576S
Q4	8-729-402-19	s	TRANSISTOR XN6501
Q5	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q6	8-729-402-19	s	TRANSISTOR XN6501
Q7	8-729-402-19	s	TRANSISTOR XN6501
Q8	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q9	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q10	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q11	8-729-905-24	s	TRANSISTOR 2SA1576S
Q12	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q13	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q14	8-729-905-24	s	TRANSISTOR 2SA1576S
Q15	8-729-905-24	s	TRANSISTOR 2SA1576S
Q16	8-729-905-24	s	TRANSISTOR 2SA1576S
Q17	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q18	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q19	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q20	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q21	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q22	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q23	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q24	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q25	8-729-905-24	s	TRANSISTOR 2SA1576S
Q26	8-729-402-19	s	TRANSISTOR XN6501
Q27	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q28	8-729-402-19	s	TRANSISTOR XN6501
Q29	8-729-402-19	s	TRANSISTOR XN6501
Q30	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q31	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q32	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q33	8-729-905-24	s	TRANSISTOR 2SA1576S
Q34	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q35	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q36	8-729-905-24	s	TRANSISTOR 2SA1576S
Q37	8-729-905-24	s	TRANSISTOR 2SA1576S
Q38	8-729-905-24	s	TRANSISTOR 2SA1576S
Q39	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q40	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q41	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q42	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q43	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q44	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q45	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q46	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q47	8-729-905-24	s	TRANSISTOR 2SA1576S
Q48	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q49	8-729-402-19	s	TRANSISTOR XN6501
Q50	8-729-402-19	s	TRANSISTOR XN6501
Q51	8-729-402-19	s	TRANSISTOR XN6501
Q52	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q53	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q54	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
Q55	8-729-905-24	s	TRANSISTOR 2SA1576S
Q56	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q57	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q58	8-729-905-24	s	TRANSISTOR 2SA1576S
Q59	8-729-905-24	s	TRANSISTOR 2SA1576S
Q60	8-729-905-24	s	TRANSISTOR 2SA1576S
Q61	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q62	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q63	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q64	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q65	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q66	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q67	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q68	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q69	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q70	8-729-402-78	s	TRANSISTOR XN6401
Q71	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q72	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q73	8-729-905-24	s	TRANSISTOR 2SA1576S
Q74	8-729-905-24	s	TRANSISTOR 2SA1576S
Q75	8-729-905-24	s	TRANSISTOR 2SA1576S
Q76	8-729-905-24	s	TRANSISTOR 2SA1576S
R1	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R2	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R3	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R5	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R6	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R7	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R8	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R9	1-218-271-11	s	METAL, CHIP 2.0K 0.50% 1/16W
R10	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R11	1-216-865-11	s	METAL, CHIP 3K 1/16W
R12	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R13	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R14	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R15	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R16	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R17	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R18	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R19	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R20	1-216-864-11	s	METAL, CHIP 0-OHM
R22	1-216-864-11	s	METAL, CHIP 0-OHM
R23	1-216-864-11	s	METAL, CHIP 0-OHM
R25	1-216-864-11	s	METAL, CHIP 0-OHM
R28	1-218-701-11	s	METAL 2.4K 0.50% 1/16W
R29	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R30	1-218-716-11	s	METAL 10K 0.50% 1/16W
R31	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R32	1-218-706-11	s	METAL 3.9K 0.50% 1/16W [for DXC-537A(UC)]
R32	1-218-701-11	s	METAL 2.4K 0.50% 1/16W [for DXC-537AP(J,EK)]
R33	1-218-708-11	s	METAL 4.7K 0.50% 1/16W [for DXC-537A(UC)]
R33	1-218-295-11	s	METAL 5.6K 0.50% 1/16W [for DXC-537AP(J,EK)]
R34	1-218-714-11	s	METAL 8.2K 0.50% 1/16W [for DXC-537A(UC)]
R34	1-218-345-11	s	METAL 9.1K 0.50% 1/16W [for DXC-537AP(J,EK)]

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Ref. No. or Q'ty	Part No.	SP	Description
R35	1-218-698-11	s	METAL 1.8K 0.50% 1/16W [for DXC-537A(UC)]
R35	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W [for DXC-537AP(J,EK)]
R36	1-218-732-11	s	METAL 47K 0.50% 1/16W
R37	1-218-732-11	s	METAL 47K 0.50% 1/16W
R38	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R39	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R40	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R41	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R42	1-218-716-11	s	METAL 10K 0.50% 1/16W
R43	1-218-716-11	s	METAL 10K 0.50% 1/16W
R44	1-218-668-11	s	METAL 100 0.50% 1/16W
R45	1-218-688-11	s	METAL 680 0.50% 1/16W
R46	1-218-716-11	s	METAL 10K 0.50% 1/16W
R47	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R48	1-218-680-11	s	METAL 330 0.50% 1/16W
R49	1-218-688-11	s	METAL 680 0.50% 1/16W
R50	1-218-680-11	s	METAL 330 0.50% 1/16W
R51	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R52	1-218-271-11	s	METAL 2K 0.50% 1/16W
R53	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R54	1-218-660-91	s	METAL 47 0.50% 1/16W
R55	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R56	1-216-804-11	s	METAL 39K 0.50% 1/16W
R57	1-218-484-11	s	METAL 750 0.50% 1/16W
R58	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R59	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R60	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R62	1-218-735-11	s	METAL 62K 0.50% 1/16W
R63	1-218-883-11	s	METAL 33K 0.50% 1/16W
R64	1-218-484-11	s	METAL 750 0.50% 1/16W
R65	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R66	1-218-270-11	s	METAL 1.1K 0.50% 1/16W
R67	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R68	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R69	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R70	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R71	1-218-716-11	s	METAL 10K 0.50% 1/16W
R72	1-218-732-11	s	METAL 47K 0.50% 1/16W
R73	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R74	1-218-732-11	s	METAL 47K 0.50% 1/16W
R75	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R76	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R77	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R78	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R79	1-218-720-11	s	METAL 15K 0.50% 1/16W
R80	1-218-668-11	s	METAL 100 0.50% 1/16W
R81	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R82	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R83	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R84	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R85	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R86	1-218-668-11	s	METAL 100 0.50% 1/16W
R87	1-218-716-11	s	METAL 10K 0.50% 1/16W
R88	1-218-668-11	s	METAL 100 0.50% 1/16W
R89	1-218-720-11	s	METAL 15K 0.50% 1/16W
R90	1-216-795-11	s	METAL 6.8K 0.50% 1/16W

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
R92	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R93	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R94	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R95	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R96	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R97	1-218-271-11	s	METAL, CHIP 2.0K 0.50% 1/16W
R98	1-216-865-11	s	METAL, CHIP 3K 1/16W
R99	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R100	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R101	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R102	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R103	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R104	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R105	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R106	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R107	1-216-864-11	s	METAL, CHIP 0-OHM
R109	1-216-864-11	s	METAL, CHIP 0-OHM
R110	1-216-864-11	s	METAL, CHIP 0-OHM
R112	1-216-864-11	s	METAL, CHIP 0-OHM
R115	1-218-732-11	s	METAL 47K 0.50% 1/16W
R116	1-218-668-11	s	METAL 100 0.50% 1/16W
R117	1-218-716-11	s	METAL 10K 0.50% 1/16W
R118	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R119	1-216-795-11	s	METAL 6.8K 0.50% 1/16W [for DXC-537A(UC)]
R119	1-218-344-11	s	METAL 7.5K 0.50% 1/16W [for DXC-537AP(J,EK)]
R120	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W [for DXC-537A(UC)]
R120	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W [for DXC-537AP(J,EK)]
R121	1-218-345-11	s	METAL 9.1K 0.50% 1/16W
R122	1-218-313-11	s	METAL, CHIP 560 1% 1/16W [for DXC-537A(UC)]
R122	1-218-680-11	s	METAL 330 0.50% 1/16W [for DXC-537AP(J,EK)]
R123	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R124	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R125	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R126	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R127	1-218-716-11	s	METAL 10K 0.50% 1/16W
R128	1-218-716-11	s	METAL 10K 0.50% 1/16W
R129	1-218-668-11	s	METAL 100 0.50% 1/16W
R130	1-218-688-11	s	METAL 680 0.50% 1/16W
R131	1-218-716-11	s	METAL 10K 0.50% 1/16W
R132	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R133	1-218-680-11	s	METAL 330 0.50% 1/16W
R134	1-218-688-11	s	METAL 680 0.50% 1/16W
R135	1-218-680-11	s	METAL 330 0.50% 1/16W
R136	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R137	1-218-271-11	s	METAL 2K 0.50% 1/16W
R138	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R139	1-218-660-91	s	METAL 47 0.50% 1/16W
R140	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R141	1-216-804-11	s	METAL 39K 0.50% 1/16W
R142	1-218-484-11	s	METAL 750 0.50% 1/16W
R143	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R144	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R145	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R147	1-218-735-11	s	METAL 62K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R148	1-218-883-11	s	METAL 33K 0.50% 1/16W
R149	1-218-484-11	s	METAL 750 0.50% 1/16W
R150	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R151	1-218-270-11	s	METAL 1.1K 0.50% 1/16W
R152	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R153	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R154	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R155	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R156	1-218-716-11	s	METAL 10K 0.50% 1/16W
R157	1-218-732-11	s	METAL 47K 0.50% 1/16W
R158	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R159	1-218-732-11	s	METAL 47K 0.50% 1/16W
R160	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R161	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R162	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R163	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R164	1-218-720-11	s	METAL 15K 0.50% 1/16W
R165	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R166	1-218-668-11	s	METAL 100 0.50% 1/16W
R167	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R168	1-218-668-11	s	METAL 100 0.50% 1/16W
R169	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R170	1-218-668-11	s	METAL 100 0.50% 1/16W
R171	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R172	1-218-716-11	s	METAL 10K 0.50% 1/16W
R173	1-218-668-11	s	METAL 100 0.50% 1/16W
R174	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R176	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R177	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R178	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R179	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R180	1-218-271-11	s	METAL, CHIP 2.0K 0.50% 1/16W
R181	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R182	1-216-865-11	s	METAL, CHIP 3K 1/16W
R183	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R184	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R185	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R186	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R187	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R188	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R189	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R190	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R191	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R192	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R193	1-216-864-11	s	METAL, CHIP 0-OHM
R195	1-216-864-11	s	METAL, CHIP 0-OHM
R196	1-216-864-11	s	METAL, CHIP 0-OHM
R198	1-216-864-11	s	METAL, CHIP 0-OHM
R201	1-218-716-11	s	METAL 10K 0.50% 1/16W
R202	1-218-668-11	s	METAL 100 0.50% 1/16W
R203	1-218-716-11	s	METAL 10K 0.50% 1/16W
R204	1-218-668-11	s	METAL 100 0.50% 1/16W
R205	1-218-716-11	s	METAL 10K 0.50% 1/16W [for DXC-537A(UC)]
R205	1-216-795-11	s	METAL 6.8K 0.50% 1/16W [for DXC-537AP(J,EK)]
R206	1-218-668-11	s	METAL 100 0.50% 1/16W [for DXC-537A(UC)]
R206	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W [for DXC-537AP(J,EK)]

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(PR-180 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R207	1-218-708-11	s	METAL 4.7K 0.50% 1/16W [for DXC-537A(UC)]
R207	1-218-714-11	s	METAL 8.2K 0.50% 1/16W [for DXC-537AP(J,EK)]
R208	1-218-706-11	s	METAL 3.9K 0.50% 1/16W [for DXC-537A(UC)]
R208	1-218-700-11	s	METAL 2.2K 0.50% 1/16W [for DXC-537AP(J,EK)]
R209	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R210	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R211	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R212	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R213	1-218-716-11	s	METAL 10K 0.50% 1/16W
R214	1-218-716-11	s	METAL 10K 0.50% 1/16W
R215	1-218-668-11	s	METAL 100 0.50% 1/16W
R216	1-218-688-11	s	METAL 680 0.50% 1/16W
R217	1-218-716-11	s	METAL 10K 0.50% 1/16W
R218	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R219	1-218-680-11	s	METAL 330 0.50% 1/16W
R220	1-218-688-11	s	METAL 680 0.50% 1/16W
R221	1-218-680-11	s	METAL 330 0.50% 1/16W
R222	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R223	1-218-271-11	s	METAL 2K 0.50% 1/16W
R224	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R225	1-218-660-91	s	METAL 47 0.50% 1/16W
R226	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R227	1-216-804-11	s	METAL 39K 0.50% 1/16W
R228	1-218-484-11	s	METAL 750 0.50% 1/16W
R229	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R230	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R231	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R233	1-218-735-11	s	METAL 62K 0.50% 1/16W
R234	1-218-883-11	s	METAL 33K 0.50% 1/16W
R235	1-218-484-11	s	METAL 750 0.50% 1/16W
R236	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R237	1-218-270-11	s	METAL 1.1K 0.50% 1/16W
R238	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R239	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R240	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R241	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R242	1-218-716-11	s	METAL 10K 0.50% 1/16W
R243	1-218-732-11	s	METAL 47K 0.50% 1/16W
R244	1-218-732-11	s	METAL 47K 0.50% 1/16W
R245	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R246	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R247	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R248	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R249	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R250	1-218-720-11	s	METAL 15K 0.50% 1/16W
R251	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R252	1-218-668-11	s	METAL 100 0.50% 1/16W
R253	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R254	1-218-668-11	s	METAL 100 0.50% 1/16W
R255	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R256	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R257	1-218-668-11	s	METAL 100 0.50% 1/16W
R258	1-218-716-11	s	METAL 10K 0.50% 1/16W
R259	1-218-668-11	s	METAL 100 0.50% 1/16W
R260	1-218-720-11	s	METAL 15K 0.50% 1/16W

(PR-180 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R261	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R262	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R263	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R264	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R265	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R266	1-218-734-11	s	METAL 56K 0.50% 1/16W
R267	1-218-734-11	s	METAL 56K 0.50% 1/16W
R268	1-218-734-11	s	METAL 56K 0.50% 1/16W
R269	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R270	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R271	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R272	1-218-272-11	s	METAL 5.1K 0.50% 1/16W
R273	1-218-272-11	s	METAL 5.1K 0.50% 1/16W
R274	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R275	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R276	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R277	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R278	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R279	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R280	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R281	1-218-716-11	s	METAL 10K 0.50% 1/16W
R282	1-218-732-11	s	METAL 47K 0.50% 1/16W
R283	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R284	1-218-668-11	s	METAL 100 0.50% 1/16W
R285	1-218-668-11	s	METAL 100 0.50% 1/16W
R286	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R287	1-218-716-11	s	METAL 10K 0.50% 1/16W
R288	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R289	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R290	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R291	1-218-716-11	s	METAL 10K 0.50% 1/16W
R292	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R293	1-218-668-11	s	METAL 100 0.50% 1/16W
R294	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R295	1-218-716-11	s	METAL 10K 0.50% 1/16W
R296	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R297	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R298	1-218-883-11	s	METAL 33K 0.50% 1/16W
R299	1-218-716-11	s	METAL 10K 0.50% 1/16W
R300	1-218-724-11	s	METAL 22K 0.50% 1/16W
R301	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R302	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R303	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R304	1-218-883-11	s	METAL 33K 0.50% 1/16W
R305	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R306	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R307	1-218-883-11	s	METAL 33K 0.50% 1/16W
R308	1-218-883-11	s	METAL 33K 0.50% 1/16W
R309	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R310	1-218-676-11	s	METAL 220 0.50% 1/16W
R311	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R312	1-218-668-11	s	METAL 100 0.50% 1/16W
R313	1-218-883-11	s	METAL 33K 0.50% 1/16W
R314	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R315	1-218-668-11	s	METAL 100 0.50% 1/16W
R316	1-218-668-11	s	METAL 100 0.50% 1/16W
R317	1-216-864-11	s	METAL, CHIP 0-OHM
R318	1-216-864-11	s	METAL, CHIP 0-OHM
R319	1-216-864-11	s	METAL, CHIP 0-OHM

(PR-180 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R320	1-218-716-11	s	METAL 10K 0.50% 1/16W
RV1	1-237-032-11	s	RES, ADJ, METAL 500
RV2	1-237-036-11	s	RES, ADJ, METAL 10K
RV3	1-237-036-11	s	RES, ADJ, METAL 10K
RV4	1-237-033-11	s	RES, ADJ, METAL 1K
RV5	1-237-035-11	s	RES, ADJ, METAL 5K
RV6	1-241-266-11	s	RES, ADJ, METAL 50K
RV7	1-237-034-11	s	RES, ADJ, METAL 2K
RV8	1-237-032-11	s	RES, ADJ, METAL 500
RV9	1-237-036-11	s	RES, ADJ, METAL 10K
RV10	1-237-036-11	s	RES, ADJ, METAL 10K
RV11	1-237-033-11	s	RES, ADJ, METAL 1K
RV12	1-237-035-11	s	RES, ADJ, METAL 5K
RV13	1-241-266-11	s	RES, ADJ, METAL 50K
RV14	1-237-034-11	s	RES, ADJ, METAL 2K
RV15	1-237-032-11	s	RES, ADJ, METAL 500
RV16	1-237-036-11	s	RES, ADJ, METAL 10K
RV17	1-237-036-11	s	RES, ADJ, METAL 10K
RV18	1-237-033-11	s	RES, ADJ, METAL 1K
RV19	1-237-035-11	s	RES, ADJ, METAL 5K
RV20	1-241-266-11	s	RES, ADJ, METAL 50K
RV21	1-237-034-11	s	RES, ADJ, METAL 2K
RV22	1-237-035-11	s	RES, ADJ, METAL 5K
RV23	1-241-263-11	s	RES, ADJ, METAL 5K
RV24	1-241-263-11	s	RES, ADJ, METAL 5K
RV25	1-237-033-11	s	RES, ADJ, METAL 1K
RV26	1-237-033-11	s	RES, ADJ, METAL 1K
RV27	1-241-262-11	s	RES, ADJ, METAL 2K
RV28	1-241-262-11	s	RES, ADJ, METAL 2K
RV29	1-241-262-11	s	RES, ADJ, METAL 2K
SW1	1-571-275-31	s	SWITCH, SLIDE
SW2	1-571-275-31	s	SWITCH, SLIDE
SW3	1-571-275-31	s	SWITCH, SLIDE
SW4	1-572-272-11	s	SWITCH, SLIDE
TP1	1-535-877-22	o	CHIP, CHECKER
TP2	1-535-877-22	o	CHIP, CHECKER
TP3	1-535-877-22	o	CHIP, CHECKER
TP4	1-535-877-22	o	CHIP, CHECKER
TP5	1-535-877-22	o	CHIP, CHECKER
TP6	1-535-877-22	o	CHIP, CHECKER
TP7	1-535-877-22	o	CHIP, CHECKER
TP8	1-535-877-22	o	CHIP, CHECKER
TP9	1-535-877-22	o	CHIP, CHECKER
TP10	1-535-877-22	o	CHIP, CHECKER
TP11	1-535-877-22	o	CHIP, CHECKER
TP12	1-535-877-22	o	CHIP, CHECKER
TP13	1-535-877-22	o	CHIP, CHECKER

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

SG-171 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7515-288-A	o	MOUNTED CIRCUIT BOARD, SG-171 (N) [for DXC-537A(J,UC)]
1pc	A-7515-289-A	o	MOUNTED CIRCUIT BOARD, SG-171 (P) [for DXC-537AP(EK)]
C3	1-135-159-21	s	TANTALUM, CHIP 10uF 10% 20V
C5	1-135-159-21	s	TANTALUM, CHIP 10uF 10% 20V
C6	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C7	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C8	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C9	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C11	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C12	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C13	1-163-239-11	s	CERAMIC 33PF 5% 50V [for DXC-537AP(EK)]
C14	1-135-073-00	s	TANTALUM, CHIP 0.33uF 10% 35V
C15	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C16	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C17	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C18	1-135-210-11	s	TANTALUM, CHIP 4.7uF 10% 10V
C20	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C22	1-135-210-11	s	TANTALUM, CHIP 4.7uF 10% 10V
C23	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C32	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C33	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C37	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C38	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C41	1-126-320-11	s	ELECT, NONPOLAR 10uF 20% 16V
C43	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C46	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C47	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V [for DXC-537AP(EK)]
C50	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C53	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C54	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C55	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V [for DXC-537AP(EK)]
C56	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C59	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C60	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C61	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C62	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C64	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C65	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C66	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C70	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 6.3V
C73	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C75	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C76	1-135-159-21	s	TANTALUM, CHIP 10uF 10% 20V
C77	1-135-156-21	s	TANTALUM, CHIP 6.8uF 10% 6.3V
C79	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C80	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C81	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C82	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C84	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C85	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C86	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C87	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C88	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C89	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V

(SG-171 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C93	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C95	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
CN1	1-563-687-21	o	CONNECTOR, BOARD TO BOARD 14P
CN2	1-563-687-21	o	CONNECTOR, BOARD TO BOARD 14P
CP1	1-577-089-11	s	OSCILLATOR, CRYSTAL [for DXC-537A(J,UC)]
CP1	1-577-183-11	s	OSCILLATOR, CRYSTAL [for DXC-537AP(EK)]
D1	8-719-104-34	s	DIODE 1S2836
D2	8-719-104-34	s	DIODE 1S2836
D3	8-719-104-34	s	DIODE 1S2836
D4	8-719-104-34	s	DIODE 1S2836 [for DXC-537AP(EK)]
IC1	8-759-101-12	s	IC UPC311G2
IC2	8-752-335-47	s	IC CXD1216M
IC3	8-759-100-94	s	IC UPC358G2
IC4	8-759-973-99	s	IC CXD1361M [for DXC-537AP(EK)]
IC5	8-759-100-94	s	IC UPC358G2
IC6	8-759-902-88	s	IC SN74LS123NS
IC7	8-759-100-94	s	IC UPC358G2
IC8	8-759-902-88	s	IC SN74LS123NS
IC9	8-752-332-67	s	IC CXD1217M
IC10	8-759-239-23	s	IC SN74HC86NS
IC11	8-759-234-77	s	IC TC4S66F
IC12	8-759-239-34	s	IC TC74HC4538AF
IC13	8-759-038-46	s	IC TC7S00F
IC14	8-759-112-66	s	IC UPC812G2
IC15	8-759-242-64	s	IC TC4W53F
IC16	8-759-242-64	s	IC TC4W53F
IC18	8-759-927-46	s	IC SN74HC00ANS
IC19	8-759-234-77	s	IC TC4S66F
IC20	8-759-234-20	s	IC TC7S08F
L1	1-408-785-21	s	INDUCTOR, CHIP 47uH
L2	1-408-785-21	s	INDUCTOR, CHIP 47uH
L3	1-408-785-21	s	INDUCTOR, CHIP 47uH
L4	1-410-711-31	s	INDUCTOR, CHIP 33uH
L5	1-408-785-21	s	INDUCTOR, CHIP 47uH
L8	1-408-785-21	s	INDUCTOR, CHIP 47uH
L9	1-410-719-31	s	INDUCTOR, CHIP 150uH [for DXC-537A(J,UC)]
L9	1-410-717-31	s	INDUCTOR, CHIP 100uH [for DXC-537AP(EK)]
L10	1-408-785-21	s	INDUCTOR, CHIP 47uH
L11	1-408-785-21	s	INDUCTOR, CHIP 47uH
Q1	8-729-402-19	s	TRANSISTOR XN6501
Q2	8-729-402-84	s	TRANSISTOR XN4601
Q3	8-729-216-22	s	TRANSISTOR 2SA1162
Q4	8-729-402-19	s	TRANSISTOR XN6501
Q5	8-729-403-29	s	TRANSISTOR XN6435
Q6	8-729-402-84	s	TRANSISTOR XN4601
Q9	8-729-402-19	s	TRANSISTOR XN6501
Q10	8-729-403-29	s	TRANSISTOR XN6435
Q12	8-729-402-84	s	TRANSISTOR XN4601
Q13	8-729-402-19	s	TRANSISTOR XN6501
Q14	8-729-403-29	s	TRANSISTOR XN6435
Q15	8-729-216-22	s	TRANSISTOR 2SA1162
Q16	8-729-141-53	s	TRANSISTOR 2SK94-X2X3X4
Q17	8-729-402-84	s	TRANSISTOR XN4601 [for DXC-537A(J,UC)]

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(SG-171 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q21	8-729-216-22	s	TRANSISTOR 2SA1162
R10	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R12	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R13	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R15	1-216-652-11	s	METAL, CHIP 1.1K 0.5% 1/10W
R23	1-216-670-11	s	METAL, CHIP 6.2K 0.5% 1/10W
R36	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W [for DXC-537A(J,UC)]
R57	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W [for DXC-537AP(EK)]
R68	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W [for DXC-537A(J,UC)]
R68	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W [for DXC-537AP(EK)]
R69	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W [for DXC-537A(J,UC)]
R69	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W [for DXC-537AP(EK)]
R82	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R83	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R89	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R90	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R91	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R99	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R116	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R117	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R123	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R124	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R125	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W
R137	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W [for DXC-537A(J,UC)]
R138	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W [for DXC-537A(J,UC)]
R140	1-216-672-11	s	METAL, CHIP 7.5K 0.5% 1/10W
RV1	1-241-262-11	s	RES, ADJ, METAL 2K
RV2	1-241-265-11	s	RES, ADJ, METAL 20K

SW-590 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-562-739-11	o	HOUSING, CONNECTOR 6P
1pc	1-564-831-11	o	CONTACT, FEMALE
1pc	1-569-193-11	s	CONTACT
1pc	1-569-197-11	o	PLUG HOUSING, 4P
1pc	1-569-199-11	o	PLUG HOUSING, 6P
1pc	1-648-026-12	o	PRINTED CIRCUIT BOARD, SW-590
CN1	1-564-013-11	o	CONNECTOR 3P, MALE
R1	1-215-405-00	s	METAL 220 1% 1/6W
R2	1-215-425-00	s	METAL 1.5K 1% 1/6W
R3	1-215-373-31	s	METAL 10 1% 1/6W
R4	1-215-461-00	s	METAL 47K 1% 1/6W
R5	1-215-453-00	s	METAL 22K 1% 1/6W
S1	1-554-174-00	s	SWITCH, TACTILE
S2	1-554-174-00	s	SWITCH, TACTILE
S3	1-554-174-00	s	SWITCH, TACTILE

SW-591 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-562-739-11	o	HOUSING, CONNECTOR 6P
1pc	1-564-831-11	o	CONTACT, FEMALE
1pc	1-569-193-11	s	CONTACT
1pc	1-569-196-31	o	HOUSING, 3P
1pc	1-569-196-41	o	HOUSING, 3P
1pc	1-648-027-12	o	PRINTED CIRCUIT BOARD, SW-591
CN11	1-564-014-11	s	CONNECTOR 4P, MALE
R11	1-215-461-00	s	METAL 47K 1% 1/6W
R12	1-215-425-00	s	METAL 1.5K 1% 1/6W
R13	1-215-461-00	s	METAL 47K 1% 1/6W
R14	1-215-425-00	s	METAL 1.5K 1% 1/6W
R15	1-215-453-00	s	METAL 22K 1% 1/6W
R16	1-215-461-00	s	METAL 47K 1% 1/6W
R17	1-215-373-31	s	METAL 10 1% 1/6W
R18	1-215-425-00	s	METAL 1.5K 1% 1/6W
S11	1-570-985-11	s	SWITCH, TOGGLE
S12	1-570-985-11	s	SWITCH, TOGGLE
S13	1-570-985-11	s	SWITCH, TOGGLE
S14	1-571-396-11	s	SWITCH, TOGGLE
T11	1-427-487-00	s	TRANSFORMER, OUTPUT

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

SW-592 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-564-831-11	o	CONTACT, FEMALE
1pc	1-569-193-11	s	CONTACT
1pc	1-569-197-21	o	HOUSING, 4P
1pc	1-648-028-11	o	PRINTED CIRCUIT BOARD, SW-592
2pcs	3-167-445-02	s	KNOB, SWITCH
SW1	1-571-259-11	s	SWITCH, SLIDE
SW2	1-571-259-11	s	SWITCH, SLIDE

SW-622 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-648-029-11	o	PRINTED CIRCUIT BOARD, SW-622
CB1	⚠1-532-681-00	s	CIRCUIT BREAKER 4A 125V
CN1	1-560-364-00	o	CONNECTOR POST HEADER,ILG (2P)

VA-138 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-906-A	o	MOUNTED CIRCUIT BOARD, VA-138
1pc	3-179-896-01	o	PLATE, SHIELD, VA
1pc	3-179-897-01	o	SUPPORT
1pc	3-674-361-01	o	SUPPORT, PC BOARD
1pc	7-622-207-05	s	NUT 2.6, TYPE 2
C1	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C2	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C3	1-126-391-11	s	ELECT, CHIP 47uF 20% 6.3V
C4	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C5	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C6	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C7	1-164-156-11	s	CERAMIC 0.1uF 25V
C8	1-137-323-11	s	FILM 0.01uF 5% 16V
C10	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C11	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C12	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C13	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C14	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C15	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C16	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C17	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C18	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C19	1-135-179-21	s	TANTALUM, CHIP 2.2uF 10% 16V
C23	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C24	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C25	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C26	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C27	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C28	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C29	1-162-957-11	s	CERAMIC 220PF 5% 50V
C30	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C31	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C32	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C33	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C34	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C35	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C36	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C37	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C38	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C39	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C40	1-164-315-11	s	CERAMIC 470PF 5% 50V
C41	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C42	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C43	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C44	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C45	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C101	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C102	1-164-156-11	s	CERAMIC 0.1uF 25V
C103	1-164-156-11	s	CERAMIC 0.1uF 25V
C104	1-164-156-11	s	CERAMIC 0.1uF 25V
C105	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C106	1-164-156-11	s	CERAMIC 0.1uF 25V
C107	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C108	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C109	1-164-156-11	s	CERAMIC 0.1uF 25V
C110	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C112	1-164-156-11	s	CERAMIC 0.1uF 25V
C114	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C115	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(VA-138 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C116	1-164-156-11	s	CERAMIC 0.1uF 25V
C117	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C119	1-135-214-21	s	TANTAL 4.7uF 20% 20V
C120	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C121	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C123	1-164-315-11	s	CERAMIC 470PF 5% 50V
C124	1-137-306-11	s	FILM 0.1uF 5% 16V
C125	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C126	1-164-156-11	s	CERAMIC 0.1uF 25V
C201	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C202	1-164-156-11	s	CERAMIC 0.1uF 25V
C203	1-164-156-11	s	CERAMIC 0.1uF 25V
C204	1-164-156-11	s	CERAMIC 0.1uF 25V
C205	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C206	1-164-156-11	s	CERAMIC 0.1uF 25V
C207	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C208	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C209	1-164-156-11	s	CERAMIC 0.1uF 25V
C210	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C212	1-164-156-11	s	CERAMIC 0.1uF 25V
C214	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C215	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C216	1-164-156-11	s	CERAMIC 0.1uF 25V
C217	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C220	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C221	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C223	1-164-315-11	s	CERAMIC 470PF 5% 50V
C224	1-137-306-11	s	FILM 0.1uF 5% 16V
C225	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C226	1-164-156-11	s	CERAMIC 0.1uF 25V
C301	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C302	1-164-156-11	s	CERAMIC 0.1uF 25V
C303	1-164-156-11	s	CERAMIC 0.1uF 25V
C304	1-164-156-11	s	CERAMIC 0.1uF 25V
C305	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C306	1-164-156-11	s	CERAMIC 0.1uF 25V
C307	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C308	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C309	1-164-156-11	s	CERAMIC 0.1uF 25V
C310	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C312	1-164-156-11	s	CERAMIC 0.1uF 25V
C314	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C315	1-135-180-21	s	TANTAL 3.3uF 20% 6.3V
C316	1-164-156-11	s	CERAMIC 0.1uF 25V
C317	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C320	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C321	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C323	1-164-315-11	s	CERAMIC 470PF 5% 50V
C324	1-137-306-11	s	FILM 0.1uF 5% 16V
C325	1-135-217-21	s	TANTALUM, CHIP 15uF 10% 6.3
C326	1-164-156-11	s	CERAMIC 0.1uF 25V
CN1	1-565-780-11	o	CONNECTOR,TX(P.L)(PC BOARD)50P
CN2	1-563-681-21	o	CONNECTOR, BOARD TO BOARD 8P
CN3	1-563-687-21	o	CONNECTOR, BOARD TO BOARD 14P
CN4	1-750-572-11	o	CONNECTOR, BOARD TO BOARD 14P
CN5	1-750-572-11	o	CONNECTOR, BOARD TO BOARD 14P
CN6	1-565-136-11	o	PIN, CONNECTOR (STRAIGHT) 3P

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(VA-138 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D1	8-719-974-76	s	DIODE HSM107S
D3	8-719-404-35	s	DIODE MA141WK
D4	8-719-404-35	s	DIODE MA141WK
D5	8-719-985-68	s	DIODE HZS5CLL
D6	8-719-974-76	s	DIODE HSM107S
D7	8-719-974-76	s	DIODE HSM107S
D8	8-719-974-76	s	DIODE HSM107S
E1	1-535-877-22	o	CHIP, CHECKER
FL1	1-239-620-21	s	FILTER, TRAP
FL2	1-239-620-21	s	FILTER, TRAP
FL3	1-239-620-21	s	FILTER, TRAP
IC1	8-752-052-71	s	IC CXA1486Q
IC2	8-759-066-59	s	IC TC74HC4053AFS
IC3	8-759-076-06	s	IC TL064CPW
IC5	8-759-066-59	s	IC TC74HC4053AFS
IC6	8-759-635-27	s	IC M62352GP
IC7	8-752-052-71	s	IC CXA1486Q
IC8	8-759-066-59	s	IC TC74HC4053AFS
IC9	8-759-076-06	s	IC TL064CPW
IC10	8-759-234-20	s	IC TC7S08F
IC11	8-759-066-59	s	IC TC74HC4053AFS
IC12	8-759-635-27	s	IC M62352GP
IC13	8-752-052-71	s	IC CXA1486Q
IC14	8-759-066-59	s	IC TC74HC4053AFS
IC15	8-759-076-06	s	IC TL064CPW
IC17	8-759-066-59	s	IC TC74HC4053AFS
IC18	8-759-635-27	s	IC M62352GP
IC19	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC20	8-759-066-61	s	IC TC4053BFS
IC21	8-759-066-61	s	IC TC4053BFS
IC22	8-759-076-06	s	IC TL064CPW
IC23	8-759-101-12	s	IC UPC311G2
IC24	8-759-169-20	s	IC HD6305Y0E92F
IC25	8-759-630-27	s	IC M5236ML
IC26	8-759-242-64	s	IC TC4W53F
IC28	8-759-981-65	s	IC LM2903M
IC29	8-759-906-53	s	IC TL062CPS
IC30	8-759-551-68	s	IC M6M80021FP
IC31	8-759-209-90	s	IC TC4S71F
IC34	8-759-234-20	s	IC TC7S08F
IC35	8-759-035-90	s	IC SC7S02FEL
IC36	8-759-031-84	s	IC SC7S04F
IC37	8-759-234-20	s	IC TC7S08F
IC38	8-759-031-84	s	IC SC7S04F
IC39	8-759-209-15	s	IC TC4SU69F
L1	1-410-389-31	s	INDUCTOR, CHIP 47uH
L2	1-410-389-31	s	INDUCTOR, CHIP 47uH
L3	1-410-385-11	s	INDUCTOR, CHIP 22uH
L6	1-410-387-11	s	INDUCTOR, CHIP 33uH
Q1	8-729-905-23	s	TRANSISTOR 2SA1576R
Q2	8-729-905-23	s	TRANSISTOR 2SA1576R
Q3	8-729-905-23	s	TRANSISTOR 2SA1576R
Q4	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q5	8-729-402-19	s	TRANSISTOR XN6501
Q6	8-729-402-19	s	TRANSISTOR XN6501
Q7	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q8	8-729-402-84	s	TRANSISTOR XN4601

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Ref. No. or Q'ty	Part No.	SP	Description
Q9	8-729-402-84	s	TRANSISTOR XN4601
Q11	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q12	8-729-402-19	s	TRANSISTOR XN6501
Q13	8-729-403-32	s	TRANSISTOR XN6534
Q14	8-729-402-84	s	TRANSISTOR XN4601
Q15	8-729-143-13	s	TRANSISTOR 2SC4176-B34
Q16	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q17	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q18	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q19	8-729-101-07	s	TRANSISTOR 2SB798
Q20	8-729-101-07	s	TRANSISTOR 2SB798
Q21	8-729-807-50	s	TRANSISTOR 2SD1623
Q22	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q23	8-729-109-44	s	TRANSISTOR 2SK94
Q24	8-729-905-23	s	TRANSISTOR 2SA1576R
Q25	8-729-905-23	s	TRANSISTOR 2SA1576R
Q26	8-729-905-23	s	TRANSISTOR 2SA1576R
Q101	8-729-905-23	s	TRANSISTOR 2SA1576R
Q102	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q201	8-729-905-23	s	TRANSISTOR 2SA1576R
Q202	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q301	8-729-905-23	s	TRANSISTOR 2SA1576R
Q302	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
R1	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R2	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R3	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R4	1-218-716-11	s	METAL 10K 0.50% 1/16W
R5	1-218-716-11	s	METAL 10K 0.50% 1/16W
R6	1-218-716-11	s	METAL 10K 0.50% 1/16W
R7	1-218-716-11	s	METAL 10K 0.50% 1/16W
R8	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R9	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R10	1-218-716-11	s	METAL 10K 0.50% 1/16W
R11	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R12	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R13	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R14	1-218-688-11	s	METAL 680 0.50% 1/16W
R15	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R16	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R17	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R18	1-218-716-11	s	METAL 10K 0.50% 1/16W
R19	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R20	1-218-668-11	s	METAL 100 0.50% 1/16W
R21	1-218-716-11	s	METAL 10K 0.50% 1/16W
R22	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R23	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R24	1-216-814-11	s	METAL, CHIP 270 5% 1/16W
R25	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R26	1-218-716-11	s	METAL 10K 0.50% 1/16W
R27	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R28	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R29	1-218-724-11	s	METAL 22K 0.50% 1/16W
R30	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R31	1-218-752-11	s	METAL 330K 0.50% 1/16W
R32	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R33	1-218-716-11	s	METAL 10K 0.50% 1/16W
R34	1-218-668-11	s	METAL 100 0.50% 1/16W
R35	1-218-668-11	s	METAL 100 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R36	1-218-668-11	s	METAL 100 0.50% 1/16W
R37	1-218-716-11	s	METAL 10K 0.50% 1/16W
R38	1-218-740-11	s	METAL 100K 0.50% 1/16W
R39	1-218-716-11	s	METAL 10K 0.50% 1/16W
R40	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R41	1-218-668-11	s	METAL 100 0.50% 1/16W
R42	1-218-668-11	s	METAL 100 0.50% 1/16W
R43	1-218-668-11	s	METAL 100 0.50% 1/16W
R44	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R45	1-218-668-11	s	METAL 100 0.50% 1/16W
R46	1-218-716-11	s	METAL 10K 0.50% 1/16W
R47	1-218-716-11	s	METAL 10K 0.50% 1/16W
R48	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R49	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R50	1-218-732-11	s	METAL 47K 0.50% 1/16W
R51	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R52	1-218-716-11	s	METAL 10K 0.50% 1/16W
R53	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R54	1-218-668-11	s	METAL 100 0.50% 1/16W
R55	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R56	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R57	1-216-994-11	s	METAL, CHIP 13K 5% 1/16W
R58	1-218-740-11	s	METAL 100K 0.50% 1/16W
R59	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R60	1-218-716-11	s	METAL 10K 0.50% 1/16W
R61	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R62	1-218-716-11	s	METAL 10K 0.50% 1/16W
R63	1-218-734-11	s	METAL 56K 0.50% 1/16W
R64	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R65	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R66	1-218-716-11	s	METAL 10K 0.50% 1/16W
R67	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R68	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R69	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R70	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R71	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R72	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R73	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R74	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R75	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R76	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R77	1-218-724-11	s	METAL 22K 0.50% 1/16W
R78	1-218-676-11	s	METAL 220 0.50% 1/16W
R79	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R80	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R81	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R82	1-218-883-11	s	METAL 33K 0.50% 1/16W
R83	1-216-804-11	s	METAL 39K 0.50% 1/16W
R84	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R85	1-218-883-11	s	METAL 33K 0.50% 1/16W
R86	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R87	1-218-716-11	s	METAL 10K 0.50% 1/16W
R88	1-218-668-11	s	METAL 100 0.50% 1/16W
R89	1-218-668-11	s	METAL 100 0.50% 1/16W
R90	1-218-668-11	s	METAL 100 0.50% 1/16W
R91	1-218-716-11	s	METAL 10K 0.50% 1/16W
R92	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R93	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R94	1-216-817-11	s	METAL, CHIP 470 5% 1/16W

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

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Ref. No. or Q'ty	Part No.	SP	Description
R96	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R98	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R100	1-218-668-11	s	METAL 100 0.50% 1/16W
R101	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R102	1-218-668-11	s	METAL 100 0.50% 1/16W
R103	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R104	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R105	1-216-804-11	s	METAL 39K 0.50% 1/16W
R106	1-218-668-11	s	METAL 100 0.50% 1/16W
R107	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R108	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R109	1-218-668-11	s	METAL 100 0.50% 1/16W
R110	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R111	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R112	1-218-716-11	s	METAL 10K 0.50% 1/16W
R113	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R114	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R116	1-218-740-11	s	METAL 100K 0.50% 1/16W
R117	1-218-716-11	s	METAL 10K 0.50% 1/16W
R118	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R119	1-218-668-11	s	METAL 100 0.50% 1/16W
R120	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R121	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R122	1-218-668-11	s	METAL 100 0.50% 1/16W
R123	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R124	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R125	1-218-668-11	s	METAL 100 0.50% 1/16W
R126	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R127	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R128	1-218-732-11	s	METAL 47K 0.50% 1/16W
R129	1-218-668-11	s	METAL 100 0.50% 1/16W
R130	1-218-740-11	s	METAL 100K 0.50% 1/16W
R134	1-218-734-11	s	METAL 56K 0.50% 1/16W
R135	1-218-724-11	s	METAL 22K 0.50% 1/16W
R136	1-218-732-11	s	METAL 47K 0.50% 1/16W
R137	1-218-724-11	s	METAL 22K 0.50% 1/16W
R138	1-218-724-11	s	METAL 22K 0.50% 1/16W
R139	1-218-724-11	s	METAL 22K 0.50% 1/16W
R140	1-218-732-11	s	METAL 47K 0.50% 1/16W
R141	1-218-732-11	s	METAL 47K 0.50% 1/16W
R142	1-218-732-11	s	METAL 47K 0.50% 1/16W
R144	1-218-734-11	s	METAL 56K 0.50% 1/16W
R145	1-218-732-11	s	METAL 47K 0.50% 1/16W
R146	1-218-724-11	s	METAL 22K 0.50% 1/16W
R147	1-218-740-11	s	METAL 100K 0.50% 1/16W
R149	1-218-732-11	s	METAL 47K 0.50% 1/16W
R150	1-218-732-11	s	METAL 47K 0.50% 1/16W
R151	1-218-668-11	s	METAL 100 0.50% 1/16W
R152	1-218-732-11	s	METAL 47K 0.50% 1/16W
R153	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R154	1-218-724-11	s	METAL 22K 0.50% 1/16W
R157	1-218-740-11	s	METAL 100K 0.50% 1/16W
R159	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R161	1-218-740-11	s	METAL 100K 0.50% 1/16W
R162	1-218-732-11	s	METAL 47K 0.50% 1/16W
R164	1-216-864-11	s	METAL, CHIP 0-OHM
R166	1-216-864-11	s	METAL, CHIP 0-OHM
R201	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R202	1-218-668-11	s	METAL 100 0.50% 1/16W

(VA-138 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R203	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R204	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R205	1-216-804-11	s	METAL 39K 0.50% 1/16W
R206	1-218-668-11	s	METAL 100 0.50% 1/16W
R207	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R208	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R209	1-218-668-11	s	METAL 100 0.50% 1/16W
R210	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R211	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R212	1-218-716-11	s	METAL 10K 0.50% 1/16W
R213	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R214	1-218-668-11	s	METAL 100 0.50% 1/16W
R216	1-218-740-11	s	METAL 100K 0.50% 1/16W
R217	1-218-716-11	s	METAL 10K 0.50% 1/16W
R218	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R219	1-218-668-11	s	METAL 100 0.50% 1/16W
R220	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R221	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R222	1-218-668-11	s	METAL 100 0.50% 1/16W
R223	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R224	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R225	1-218-668-11	s	METAL 100 0.50% 1/16W
R226	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R227	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R228	1-218-732-11	s	METAL 47K 0.50% 1/16W
R229	1-218-668-11	s	METAL 100 0.50% 1/16W
R230	1-218-740-11	s	METAL 100K 0.50% 1/16W
R234	1-218-734-11	s	METAL 56K 0.50% 1/16W
R235	1-218-724-11	s	METAL 22K 0.50% 1/16W
R236	1-218-732-11	s	METAL 47K 0.50% 1/16W
R237	1-218-724-11	s	METAL 22K 0.50% 1/16W
R238	1-218-724-11	s	METAL 22K 0.50% 1/16W
R239	1-218-724-11	s	METAL 22K 0.50% 1/16W
R240	1-218-732-11	s	METAL 47K 0.50% 1/16W
R241	1-218-732-11	s	METAL 47K 0.50% 1/16W
R242	1-218-732-11	s	METAL 47K 0.50% 1/16W
R244	1-218-734-11	s	METAL 56K 0.50% 1/16W
R245	1-218-732-11	s	METAL 47K 0.50% 1/16W
R246	1-218-724-11	s	METAL 22K 0.50% 1/16W
R247	1-218-740-11	s	METAL 100K 0.50% 1/16W
R249	1-218-732-11	s	METAL 47K 0.50% 1/16W
R250	1-218-732-11	s	METAL 47K 0.50% 1/16W
R251	1-218-668-11	s	METAL 100 0.50% 1/16W
R252	1-218-732-11	s	METAL 47K 0.50% 1/16W
R253	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R254	1-218-724-11	s	METAL 22K 0.50% 1/16W
R255	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R257	1-218-740-11	s	METAL 100K 0.50% 1/16W
R259	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R261	1-218-740-11	s	METAL 100K 0.50% 1/16W
R262	1-218-732-11	s	METAL 47K 0.50% 1/16W
R263	1-218-724-11	s	METAL 22K 0.50% 1/16W
R264	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R301	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R302	1-218-668-11	s	METAL 100 0.50% 1/16W
R303	1-216-795-11	s	METAL 6.8K 0.50% 1/16W
R304	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R305	1-216-804-11	s	METAL 39K 0.50% 1/16W
R306	1-218-668-11	s	METAL 100 0.50% 1/16W

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

(VA-138 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R307	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R308	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R309	1-218-668-11	s	METAL 100 0.50% 1/16W
R310	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R311	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R312	1-218-716-11	s	METAL 10K 0.50% 1/16W
R313	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R316	1-218-740-11	s	METAL 100K 0.50% 1/16W
R317	1-218-716-11	s	METAL 10K 0.50% 1/16W
R318	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R319	1-218-668-11	s	METAL 100 0.50% 1/16W
R320	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R321	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R322	1-218-668-11	s	METAL 100 0.50% 1/16W
R323	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R324	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R325	1-218-668-11	s	METAL 100 0.50% 1/16W
R326	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R327	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R328	1-218-732-11	s	METAL 47K 0.50% 1/16W
R329	1-218-668-11	s	METAL 100 0.50% 1/16W
R330	1-218-740-11	s	METAL 100K 0.50% 1/16W
R334	1-218-734-11	s	METAL 56K 0.50% 1/16W
R335	1-218-724-11	s	METAL 22K 0.50% 1/16W
R336	1-218-732-11	s	METAL 47K 0.50% 1/16W
R337	1-218-724-11	s	METAL 22K 0.50% 1/16W
R338	1-218-724-11	s	METAL 22K 0.50% 1/16W
R339	1-218-724-11	s	METAL 22K 0.50% 1/16W
R340	1-218-732-11	s	METAL 47K 0.50% 1/16W
R341	1-218-732-11	s	METAL 47K 0.50% 1/16W
R342	1-218-732-11	s	METAL 47K 0.50% 1/16W
R344	1-218-734-11	s	METAL 56K 0.50% 1/16W
R345	1-218-732-11	s	METAL 47K 0.50% 1/16W
R346	1-218-724-11	s	METAL 22K 0.50% 1/16W
R347	1-218-740-11	s	METAL 100K 0.50% 1/16W
R349	1-218-732-11	s	METAL 47K 0.50% 1/16W
R350	1-218-732-11	s	METAL 47K 0.50% 1/16W
R351	1-218-668-11	s	METAL 100 0.50% 1/16W
R352	1-218-732-11	s	METAL 47K 0.50% 1/16W
R353	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R354	1-218-724-11	s	METAL 22K 0.50% 1/16W
R357	1-218-740-11	s	METAL 100K 0.50% 1/16W
R359	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R361	1-218-740-11	s	METAL 100K 0.50% 1/16W
R362	1-218-732-11	s	METAL 47K 0.50% 1/16W
R403	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R404	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R405	1-218-668-11	s	METAL 100 0.50% 1/16W
R406	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R407	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R409	1-218-740-11	s	METAL 100K 0.50% 1/16W
R410	1-218-740-11	s	METAL 100K 0.50% 1/16W
R411	1-218-740-11	s	METAL 100K 0.50% 1/16W
R412	1-218-740-11	s	METAL 100K 0.50% 1/16W
R413	1-218-740-11	s	METAL 100K 0.50% 1/16W
R414	1-218-668-11	s	METAL 100 0.50% 1/16W
R415	1-218-668-11	s	METAL 100 0.50% 1/16W
R416	1-218-668-11	s	METAL 100 0.50% 1/16W
R417	1-218-668-11	s	METAL 100 0.50% 1/16W

(VA-138 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R418	1-218-668-11	s	METAL 100 0.50% 1/16W
R419	1-218-668-11	s	METAL 100 0.50% 1/16W
R420	1-218-716-11	s	METAL 10K 0.50% 1/16W
R421	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R422	1-218-668-11	s	METAL 100 0.50% 1/16W
R423	1-218-716-11	s	METAL 10K 0.50% 1/16W
R424	1-218-716-11	s	METAL 10K 0.50% 1/16W
RB1	1-231-387-00	s	COMPOSITION CIRCUIT BLOCK
RV1	1-241-263-11	s	RES, ADJ, METAL 5K
RV2	1-241-263-11	s	RES, ADJ, METAL 5K
RV3	1-241-263-11	s	RES, ADJ, METAL 5K
RV4	1-241-264-11	s	RES, ADJ, METAL 10K
RV5	1-241-264-11	s	RES, ADJ, METAL 10K
RV6	1-241-264-11	s	RES, ADJ, METAL 10K
RV7	1-237-033-11	s	RES, ADJ, METAL 1K
S1	1-571-275-31	s	SWITCH, SLIDE
S2	1-571-275-31	s	SWITCH, SLIDE
TP1	1-535-877-22	o	CHIP, CHECKER
TP2	1-535-877-22	o	CHIP, CHECKER
TP3	1-535-877-22	o	CHIP, CHECKER
X1	1-579-216-11	s	VIBRATOR, CERAMIC 4.0MHz

Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
	1-547-259-11	o	FILTER UNIT, OPTICAL
	1-590-489-11	s	CABLE, FLAT 25P
CN101	1-562-782-21	s	CONNECTOR 10P, FEMALE "REMOTE", or
	1-948-168-11	o	HARNESS (CN)
CN102	1-562-221-21	s	CONNECTOR, 12P, FEMALE "LENS"
CN103	1-561-320-00	s	CONNECTOR, 8P FEMALE "VF, or
	1-948-168-11	o	HARNESS (CN)
CN104	1-561-781-21	s	CONNECTOR, BNC, "VIDEO OUT"
CN105	1-750-551-11	o	CONNECTOR, 3P FEMALE "MIC"
CN1F (TO SW-590 BOARD)			
	1-569-196-11	o	HOUSING, 3P
	1-569-193-11	s	CONTACT
CN1F (TO SW-622 BOARD)			
	1-561-514-00	o	HOUSING, 2P
	1-560-372-00	o	CONTACT, AWG22-28
CN4F (TO MB-477 BOARD)			
	1-569-195-41	o	HOUSING, 2P
	1-569-193-11	s	CONTACT
CN5F (TO MB-477 BOARD)			
	1-569-203-11	o	HOUSING, 10P
	1-569-193-11	s	CONTACT
CN6F (TO MB-477 BOARD)			
	1-569-200-11	o	HOUSING, 7P
	1-569-193-11	s	CONTACT
CN7F (TO MB-477 BOARD)			
	1-569-195-11	o	HOUSING, 2P
	1-569-193-11	s	CONTACT
CN8F (TO MB-477 BOARD)			
	1-569-195-11	o	HOUSING, 2P
	1-569-193-11	s	CONTACT
CN9F (TO MB-477 BOARD)			
	1-569-195-11	o	HOUSING, 2P
	1-569-193-11	s	CONTACT
CN10F (TO MB-477 BOARD)			
	1-569-200-31	o	HOUSING, 7P
	1-569-193-11	s	CONTACT
CN11F (TO MB-477 BOARD)			
	1-569-201-21	o	HOUSING, 8P
	1-569-193-11	s	CONTACT
CN11F (TO SW-591 BOARD)			
	1-569-197-11	o	HOUSING, 4P
	1-569-193-11	s	CONTACT
CN12F (TO MB-477 BOARD)			
	1-569-201-11	o	HOUSING, 8P
	1-569-193-11	s	CONTACT
CN13F (TO MB-477 BOARD)			
	1-561-514-00	o	HOUSING, 2P
	1-560-372-00	o	CONTACT, AWG22-28
CN14F (TO MB-477 BOARD)			
	1-569-195-21	o	HOUSING, 2P
	1-569-193-11	s	CONTACT
CN19F (TO MB-477 BOARD)			
	1-569-196-21	o	HOUSING, 3P
	1-569-193-11	s	CONTACT
CN20F (TO MB-477 BOARD)			
	1-569-196-11	o	HOUSING, 3P
	1-569-193-11	s	CONTACT
CN21F (TO MB-477 BOARD)			
	1-569-195-11	o	HOUSING, 2P
	1-569-193-11	s	CONTACT
CN22F (TO MB-477 BOARD)			
	1-569-199-11	o	HOUSING, 6P
	1-569-193-11	s	CONTACT

(FRAME)

Ref. No. or Q'ty	Part No.	SP	Description
CN23F (TO MB-477 BOARD)			
	1-569-197-21	o	HOUSING, 4P
	1-569-193-11	s	CONTACT
CN24F (TO MB-477 BOARD)			
	1-569-196-11	o	HOUSING, 3P
	1-569-193-11	s	CONTACT
CN25F (TO MB-477 BOARD)			
	1-569-196-11	o	HOUSING, 3P
	1-569-193-11	s	CONTACT
S101	1-552-852-00	s	SWITCH, TOGGLE "POWER"
S102	1-554-486-00	s	SWITCH, TOGGLE "AUTO W/B BALANCE"

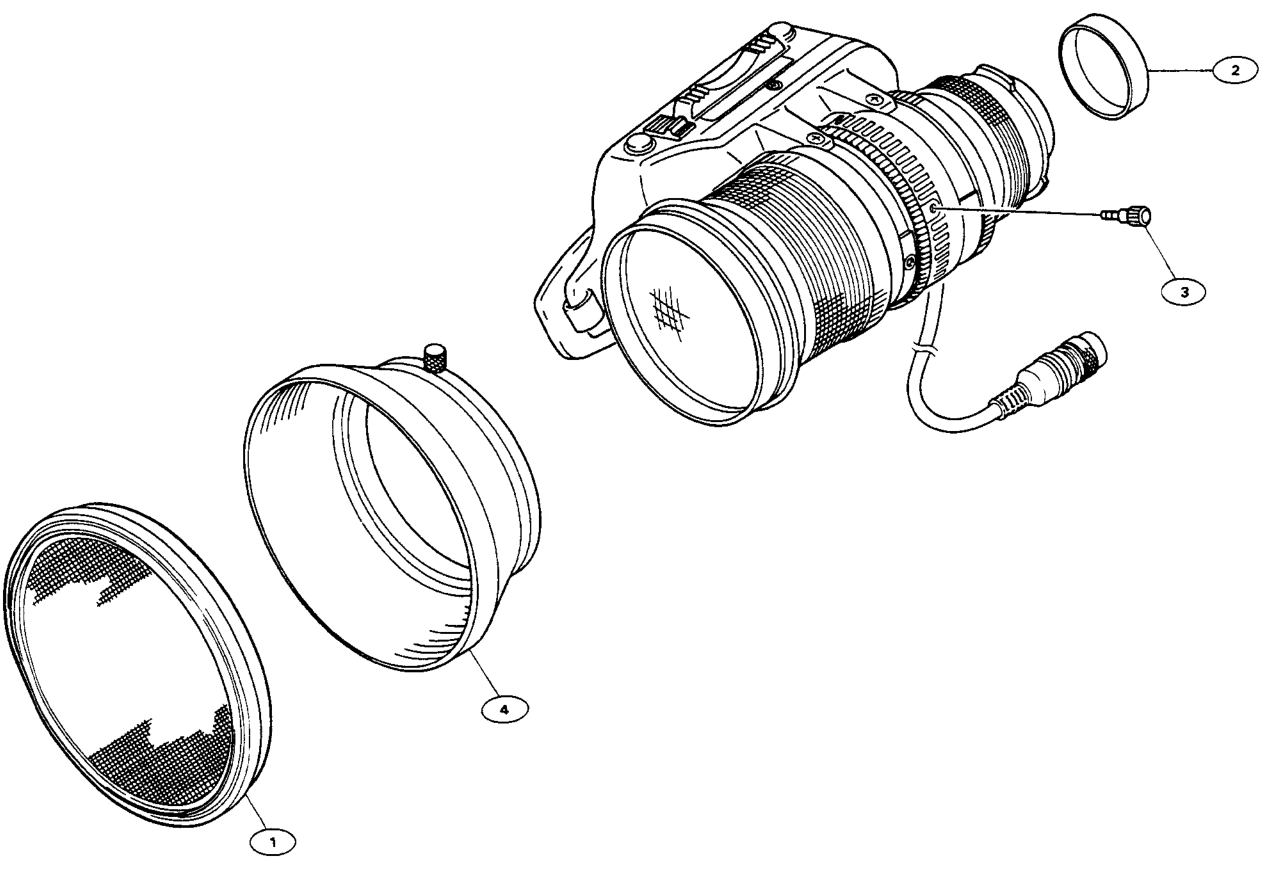
Please see pages D-13 and D-14 for the part numbers of capacitors and resistors that are not listed in the parts list.

VCL-916BYA
VCT-14

EXPLODED VIEW

VCL-916BYA

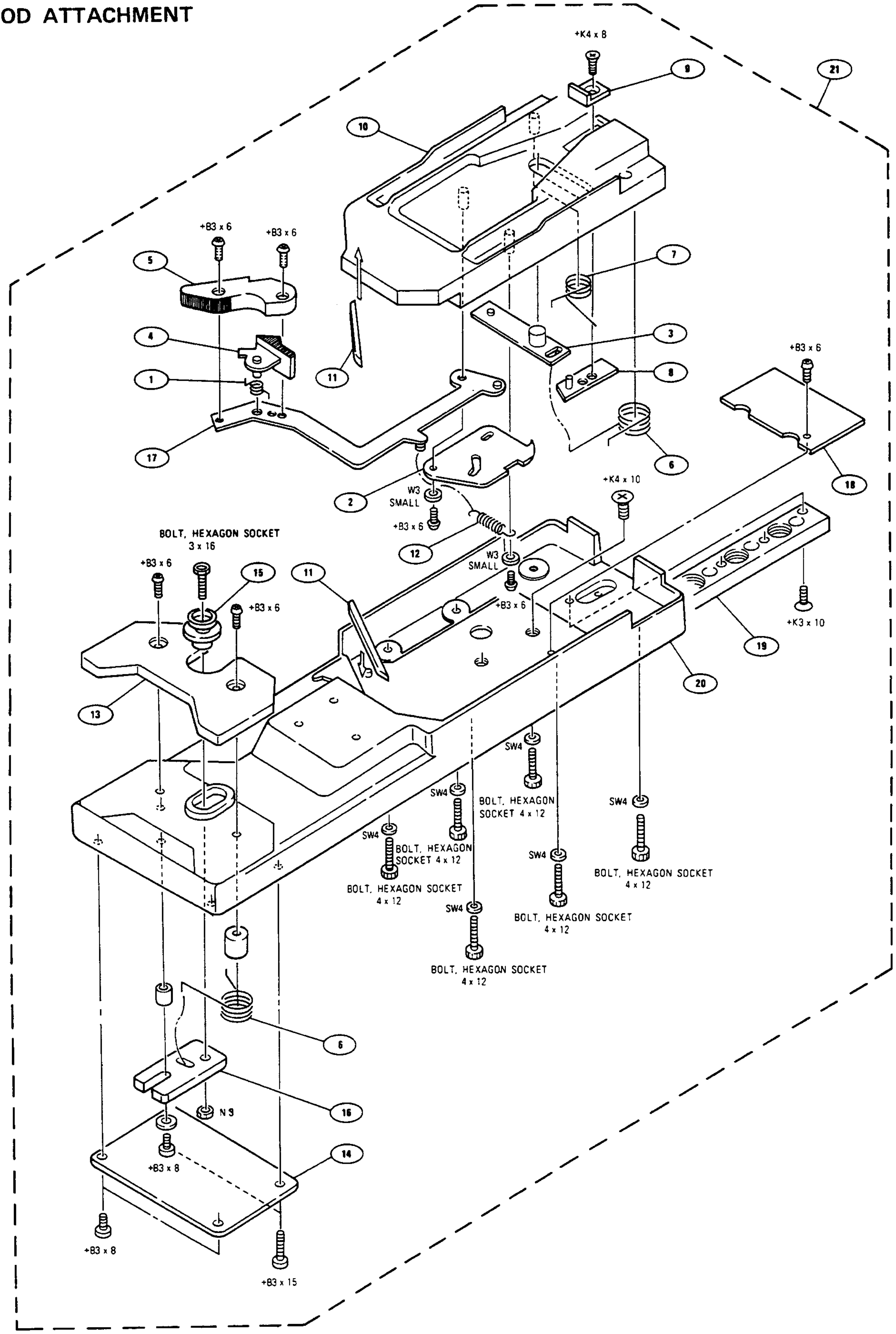
No.	Part No.	SP	Description
1	3-707-245-01	o	CAP, HOOD
2	3-707-246-01	o	CAP, DUST
3	3-707-247-01	o	LEVER, ZOOM
4	3-708-171-01	o	HOOD, LENS



VCT-14

No.	Parts No.	SP	Description
1	2-381-631-01	o	SPRING
2	2-381-632-01	o	ARM, LOCKER
3	2-381-633-01	o	SOLENOID
4	2-381-635-01	o	LEVER, LOCK
5	2-381-636-01	o	KNOB
6	2-381-637-01	o	SPRING
7	2-381-638-01	o	SPRING
8	2-381-640-01	o	DOG
9	2-381-641-01	o	COLLAR
10	2-381-642-02	o	MOUNT
11	2-381-648-01	o	INSULATOR, KNOB
12	2-381-652-01	o	SPRING, TENSION
13	3-678-704-00	o	SPACER
14	3-720-906-01	o	LID (S), REAR
15	3-720-907-01	o	PIN (S), REAR
16	3-720-908-01	o	TABLE (S), PIN, REAR
17	3-720-909-01	o	KNOB, CRANK
18	3-720-910-01	o	SHEET, SLIDE
19	3-720-911-01	o	BASE, TRIPOD FITTING SCREW
20	3-720-912-01	o	FRAME (S)
21	OPTIONAL ACCESSORY: TRIPOD ATTACHMENT "VCT-14"		

TRIPOD ATTACHMENT



+K4 x 8
9
21
10
+B3 x 6
+B3 x 6
5
7
4
11
3
1
8
+B3 x 6
17
6
18
2
W3
SMALL
+K4 x 10
+B3 x 6
12
BOLT, HEXAGON SOCKET
3 x 16
W3
SMALL
+B3 x 6
15
11
+B3 x 6
+B3 x 6
19
+K3 x 10
20
13
SW4
SW4
BOLT, HEXAGON
SOCKET 4 x 12
SW4
SW4
BOLT, HEXAGON
SOCKET 4 x 12
SW4
BOLT, HEXAGON SOCKET
4 x 12
BOLT, HEXAGON SOCKET
4 x 12
SW4
BOLT, HEXAGON SOCKET
4 x 12
BOLT, HEXAGON SOCKET
4 x 12
6
16
N3
14
+B3 x 8
+B3 x 8
+B3 x 15